WASHINGTON NEWS

Congress Adjourns . .
Federal Employees' Health Insurance . .
Medical Requirements for Airplane Pilots . .
Cases of Poliomyelitis . .

CONGRESS WINDS UP LONG SESSION

Congress, in its longest session since 1951, approved some significant legislation but failed to act on other important bills both of general nature and of particular interest to the medical profession.

Congressional decisions are expected next session, which will begin Jan. 6, on most of the pending major legislation.

In the waning hours of this year's session—which ended shortly before 6:30 a. m., EDT, Sept. 15—the House completed congressional approval of a voluntary health insurance program for federal employees.

Another bill of interest to physicians, which was approved earlier, was a catch-all housing measure with provisions pertaining to health care. The draft of physicians and dentists was continued in an extension of the military draft.

Congress also appropriated hundreds of millions of dollars for medical research, medical care, hospitals, and related programs.

The Forand and Keogh-Simpson bills were the two measures of greatest concern to physicians left untreated.

Despite the vigorous opposition of doctors and allied health groups, proponents of the Forand bill are expected to make a strong drive for congressional approval of it next year. It would increase social security taxes to help finance health care for the aged.

Indications are that the Senate Finance Committee will vote early next session on a modified version of the Keogh-Simpson bill, which would permit physicians and other self-employed persons to defer federal taxes on income put into private retirement plans.

The House Commerce Committee also postponed until next year action on a Senate-approved bill authorizing a 50-million-dollar annual program for cooperation in international medical research.

In addition to the draft and housing bills, important general legislation approved by Congress included statehood for Hawaii, a strong labor reform bill, a one-cent-per-gallon increase in the federal tax on gasoline, increased pensions for veterans with non-service-connected disabilities, an increase in the interest rate on savings bonds, a higher national debt ceiling, a two-year extension of the life of the Civil Rights Commission, and continuation of the foreign aid program, with a 3.2-billion-dollar appropriation.

Congress appropriated a total of about 73 billion dollars, about 1 billion less than President Eisenhower requested. Appropriations included 400 million dollars for medical research; $88,800,000 for Medicare; $186,200,000 for the Hill-Burton program of federal aid for hospital construction; 30 million dollars for medical research facilities; and 35 million dollars for medical research facilities other than general hospitals.

Despite the heavy Democratic majorities in the House and Senate, President Eisenhower was in the legislative driver's seat most of the time. The President's new assertion of leadership was surprising in view of the fact that the political power of a "lame duck" president usually wanes in his closing years in the White House.

Aided by the nation's economic recovery, the President used the veto—and the threat of it—to block or at least trim down big spending programs of the Democrats. His one major setback on such legislation came when Congress overrode his second veto—the 146th since he became president—of a public works bill which carried money for dams and similar projects in most congressional districts. It marked the first time Congress had overridden an Eisenhower veto.

After Democrats failed in two attempts to get Congress to override his vetoes of housing bills, President Eisenhower signed a trimmed-down, billion-dollar compromise measure. It retained provisions authorizing Federal Housing Administration loan guarantees for construction of proprietary nursing homes, direct federal loans for housing for interns and nurses, and both loans and loan guarantees for housing for elderly persons.

Congress approved a four-year extension of the air pollution control program, with authorization for an annual appropriation of 5 million dollars. The House and Senate could not agree on legislation expanding the water pollution control program, which will thus continue on the present authorized scale of 50 million dollars a year.

At the President's request, Congress changed Child Health Day from May 1 to the first Monday in October each year. The change was made because May 1 also had been designated Loyalty Day.

FEDERAL EMPLOYEES' NEW HEALTH INSURANCE

Over 75% of federal employees are expected to sign up for the voluntary health insurance program approved by Congress shortly before it adjourned this year's session.

The program will get under way next July 1 with more than 4,500,000 federal workers and members of their families eligible for coverage.

The Civil Service Commission will contract with various health groups and insurance companies for basic and catastrophe hospitalization and medical care. The government will pay half the cost of the basic coverage, expected to be about $13.50 per month per family. The total annual cost to the government is estimated at about 107 million dollars.

The program, which was endorsed in principle by the American Medical Association, will also cover members of Congress and legislative, judicial, and District of Columbia employees and their families. Coverage will continue for employees retiring after next July 1 with a minimum of 12 years of federal service.

Other legislation, supported by the A. M. A. and left pending in the Senate, would extend coverage to an estimated 250,000 already retired federal workers. Prospects for passage next year appear good.

NEW PHYSICAL AND MENTAL STANDARDS FOR AIRPLANE PILOTS

The Federal Aviation Agency will put into effect Oct. 15 new rules governing the physical and mental requirements for airplane pilots and other members of flight crews.

An applicant will be disqualified if his established medical history or clinical diagnosis shows "(1) diabetes mellitus which requires insulin or other hypoglycemic drug for control, (2) myocardial infarction, or (3) angina pectoris or other evidence of coronary heart disease which the Civil Air Surgeon finds may reasonably be expected to lead to myocardial infarction."

Specific disqualifying mental or nervous conditions are listed, as follows: "A character or behavior disorder which is sufficiently severe to have repeatedly manifested itself by overt acts, a psychotic disorder, chronic alcoholism, drug addiction, epilepsy, or a disturbance of consciousness without satisfactory medical explanation of the cause."

Also disqualifying are "any other disease of the nervous system, mental abnormality, or psychoneurotic disorder which the Civil Air Surgeon finds" either renders the applicant unable safely to perform the necessary duties now or "may reasonably be expected to result" in such incapacity within two years.

No waivers of diabetes or diseases of the heart or nervous system will be permitted. However, waivers of other physical requirements will be permitted, if an applicant can prove he is capable of meeting a pilot's responsibilities in emergency as well as normal situations.

In a statement in the *Federal Register* the Federal Aviation Agency said that the new regulations incorporate practices that have been followed informally for many years.

The agency said that, in drafting the regulations, "great weight was given to the comments received from doctors and medical associations," including the American Medical Association.

"The majority of individual doctors indicated their approval," and the A. M. A. and other medical groups gave strong support, the FAA said.

The comments of the medical profession were interpreted as giving "overwhelming and authoritative support to the medical standards being adopted" in the new regulations.

The FAA has also proposed that 60 years be set as the maximum age for a pilot, but a final decision will not be reached until later. There is no age limitation now.

NUMBER OF PARALYTIC CASES OF POLIOMYELITIS DECREASES

First reports showed that the number of paralytic cases of poliomyelitis declined early in September for the first time since early summer.

A total of 291 cases, widely scattered throughout the United States, were reported for the week ended Sept. 5. This was 27 cases less than in the previous week but the Public Health Service cautioned that reports of some cases might have been delayed because of the Labor Day week-end holiday.

The newly reported cases brought to 2,791 the total of paralytic cases this year, more than twice the 1,206 cases in the same period last year, but this year's total to date was less than half the number of cases in the same period in 1955, the first year Salk vaccine became available.

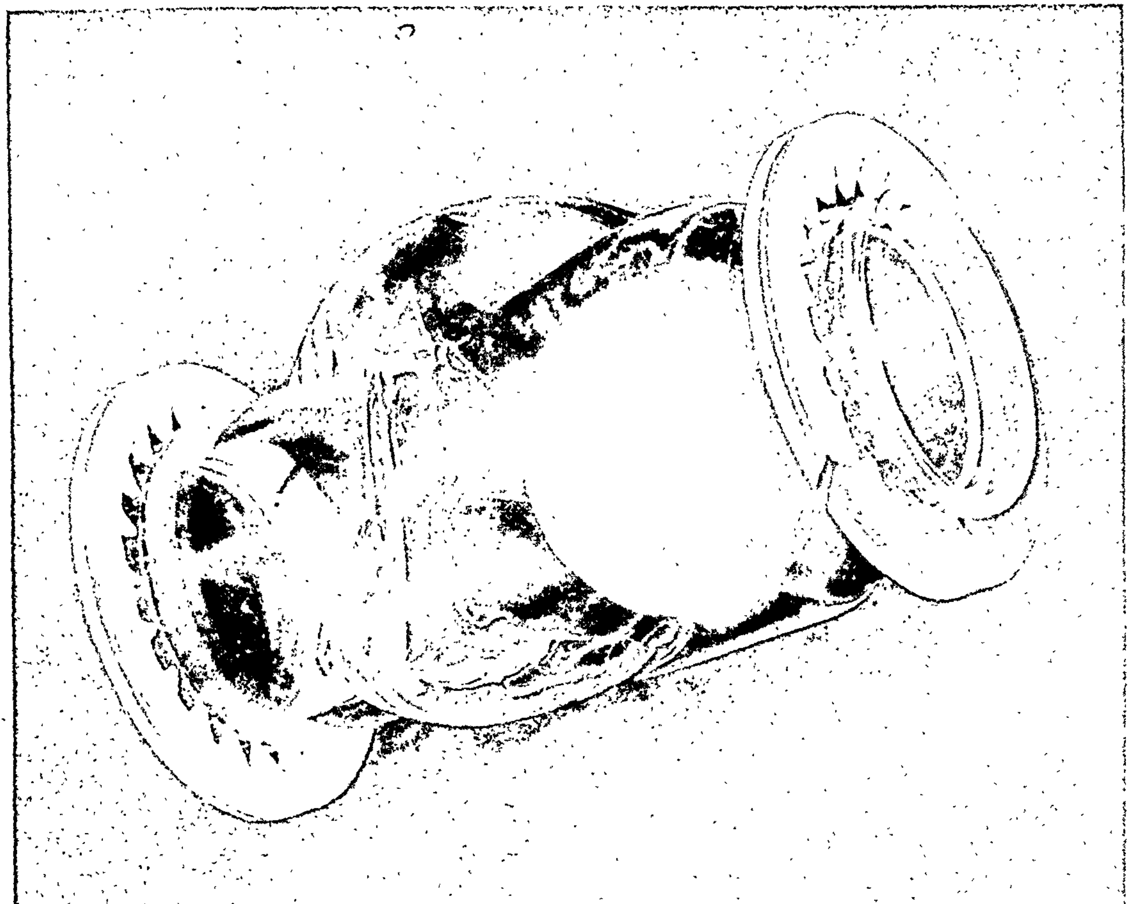
During the week of Sept. 5 4,219,492 doses of vaccine were released. Manufacturers shipped 1,729,769 doses to United States communities and exported 278,158 doses. Orders were on hand for most of the unshipped vaccine.

PERSONNEL

In the final days of the recently adjourned session the Senate confirmed President Eisenhower's nominations of Major Gen. Leonard D. Heaton as U. S. Army Surgeon General with the rank of lieutenant general. Heaton, who had been Commanding General of the Army's Walter Reed Medical Center, operated on President Eisenhower there for ileitis in 1956.

Dr. Donald Roger Chadwick, a career medical officer of the Public Health Service, is secretary of the newly established Federal Radiation Council. The council named Dr. Chadwick for the post on the recommendation of Dr. George B. Kistiakowsky, President Eisenhower's special assistant for science and technology.

President Eisenhower named as new members of the Board of Regents of the National Library of Medicine Drs. Maynard K. Hine of Indianapolis, dean of Indiana University's School of Dentistry, and Warner L. Wells, assistant professor at the University of North Carolina Medical School.



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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

MEETINGS

American Medical Association: Dr. F. J. L. Blasingame, 535 North Dearborn St., Chicago 10, Executive Vice-President.
1959 Clinical Meeting, Dallas, Texas, Dec. 1-4.
1960 Annual Meeting, Miami Beach, Fla., June 13-17.
1960 Clinical Meeting, Washington, D. C., Nov. 29-Dec. 2.
1961 Annual Meeting, New York City, June 26-30.
1961 Clinical Meeting, Denver, Nov. 28-Dec. 1.
1962 Annual Meeting, Chicago, June.

AMERICAN

1959

September

American Association of Medical Clinics, Sheraton-Blackstone Hotel, Chicago, Sept. 24-26. Dr. Edwin P. Jordan, Box 58, Charlottesville, Va., Executive Secretary.

American Association for the Surgery of Trauma, Mount Washington Hotel, Bretton Woods, N. H., Sept. 24-26. Dr. William T. Fitts Jr., 3400 Spruce St., Philadelphia 4, Secretary.

American College of Gastroenterology, Biltmore Hotel, Los Angeles, Sept. 19-26. Mr. Daniel Weiss, 33 W. 60th St., New York 23, N. Y., Executive Director.

American College of Surgeons, The Traymore Hotel, Atlantic City, N. J., Sept. 28-Oct. 2. Dr. Paul R. Hawley, 40 E. Erie St., Chicago 11, Director.

Central Association of Obstetricians and Gynecologists, Drake Hotel, Chicago, Sept. 24-26. Dr. Edwin J. DeCosta, 104 S. Michigan Ave., Chicago 3, Secretary.

International College of Surgeons, Tennessee Section, Chattanooga, Sept. 28-29. Dr. William G. Stephenson, Medical Arts Bldg., Chattanooga, Tenn., Regent.

Michigan State Medical Society, Pantlind Hotel, Grand Rapids, Sept. 28-29, Oct. 1-3. Mr. William J. Burns, 606 Townsend St., Lansing 15, Mich., Executive Secretary.

Mississippi Valley Medical Society, Hotel Chase, St. Louis, Sept. 29-Oct. 1. *Dr. Harold Swanberg, 209-224 W. C. U. Bldg., Quincy, Ill.,* Secretary.

National Recreation Congress, Morrison Hotel, Chicago, Sept. 28-Oct. 2. Mr. Jesse Reynolds, Department of Recreation and Parks, The Mosque, Laurel and Main Streets, Richmond 20, Va., Chairman.

Tennessee Valley Medical Assembly, Chattanooga, Tenn., Sept. 28-29. Dr. Guy M. Francis, 109 Medical Arts Bldg., Chattanooga 2, Tenn., Chairman.

Western Neurosurgical Society, La Valencia Hotel, La Jolla, Calif., Sept. 27-30. Dr. Ernest W. Mack, 505 S. Arlington Ave., Reno, Nev., Secretary.

October

Academy of Psychosomatic Medicine, Sheraton-Cleveland Hotel, Cleveland, Oct. 15-17. For information write: Dr. Bertram B. Moss, Suite 1035, 55 E. Washington St., Chicago 2, Secretary.

American Academy of Ophthalmology and Otolaryngology, The Palmer House, Chicago, Oct. 11-16. Dr. William L. Benedict, 15 Second St., S. W., Rochester, Minn., Executive Secretary.

American Academy of Pediatrics, The Palmer House, Chicago, Oct. 5-8. Dr. E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill., Executive Secretary.

American Association of Medical Assistants, Benjamin Franklin Hotel, Philadelphia, Oct. 16-18. Mrs. Stella Thurnau, 510 N. Dearborn, Room 924, Chicago 10, Executive Secretary.

American Association of Medical Record Librarians, *Radisson Hotel,* Minneapolis, Oct. 12-15. Miss Margaret G. Scully, 510 N. Dearborn St., Chicago 10, Director.

American College of Cardiology, Benjamin Franklin Hotel, Philadelphia, Oct. 23-25. *Dr. Philip Reichert, Empire State Bldg., New York 1,* Executive Director.

American College of Chest Physicians, 25th Anniversary Homecoming Meeting, Albuquerque, N. M., Oct. 14-17. Mr. Murray Kornfeld, 112 E. Chestnut St., Chicago 11, Executive Director.

American College of Preventive Medicine, Hotel Ambassador, Atlantic City, N. J., Oct. 21-22. Dr. John J. Wright, P. O. Box 1267, Chapel Hill, N. C., Secretary-Treasurer.

American Heart Association, Trade and Convention Center, Philadelphia, Oct. 23-27. Mr. William F. McGlone, 44 E. 23rd St., New York 10, Secretary.

American Medical Writers' Association, Chase Hotel, St. Louis, Oct. 2-3. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

American Otorhinologic Society for Plastic Surgery, Inc., Conrad Hilton Hotel, Chicago, Oct. 11. Dr. Joseph G. Gilbert, 75 Barberry Lane, Roslyn Heights, N. Y., Secretary.

American Psychiatric Association, Detroit Divisional Meeting, Hotel Statler, *Detroit,* Oct. 29-31. Dr. Benjamin Jeffries, 16321 Mack Ave., Detroit 24, Co-Chairman, Planning Committee.

American Public Health Association, Convention Hall, Atlantic City, N. J., Oct. 19-23. *Dr.* Berwyn F. Mattison, 1790 Broadway, New York 19, N. Y., *Executive Director.*

American School Health Association, Claridge Hotel, Atlantic City, N. J., Oct. 18-23. Dr. A. O. DeWeese, 515 E. Main St., Kent, Ohio, Executive Secretary.

American Society of Anesthesiologists, Inc., Americana Hotel, Bal Harbour, Fla., Oct. 5-9. Mr. John W. Andes, 188 W. Randolph St., Room 1101, Chicago 1, Executive Secretary.

American Society of Facial Plastic Surgery, Chicago, Oct. 15-17. Dr. Samuel M. Bloom, 123 E. 83rd St., New York 28, Secretary.

American Society of Plastic and Reconstructive Surgery, Hotel Fontainebleau, Miami Beach, Fla., Oct. 18-23. Dr. Thomas Ray Broadbent, 508 E. South Temple, Salt Lake City, General Secretary.

American Society of Tropical Medicine and Hygiene, Claypool Hotel, Indianapolis, Oct. 28-31. Dr. Rolla B. Hill, 3575 St. Gaudens Road, Miami 33, Fla., Executive Secretary.

Arizona Academy of General Practice, Hotel Valley Ho, Scottsdale, Oct. 15-17. Dr. Arthur V. Dudley Jr., 1524 N. Norton, Tucson, Ariz., Convention Chairman.

Association of Clinical Scientists, Sheraton-Park Hotel, Washington, D. C., *Oct. 10. Dr. Robert P. MacFate, 323 Northwood Rd., Riverside,* Ill., Secretary-Treasurer.

Association of Life Insurance Medical Directors of America, Hotel Statler Hilton, New York City, Oct. 21-23. Dr. Royal S. Schaaf, Prudential Insurance Co., P. O. Box 594, Newark 1, N. J., Secretary.

Association of Medical Illustrators, Seattle, Oct. 5-7. Miss Rose M. Reynolds, University of Nebraska College of Medicine, 42nd Dewey Ave., Omaha 5, Corresponding Secretary.

Central Neuropsychiatric Association, Hotel Roosevelt, New Orleans, Oct. 16-17. Dr. Ralph M. Patterson, Columbus Psychiatric Institute, 473 W. 12th Ave., Columbus 10, Ohio.

Clinical Orthopaedic Society, Memphis, Oct. Dr. Charles H. Frantz, 1810 Wealthy St., S.E., Grand Rapids 6, Mich., Secretary-Treasurer.

Congress of Neurological Surgeons, Americana Hotel, Miami, Fla., Oct. 28-31. Dr. Richard L. DeSaussure, Suite 101 B, 20 S. Dudley St., Memphis, Tenn., Secretary-Treasurer.

Delaware, Medical Society of, Oct. 14-15. Mr. Lawrence J. Morris Jr., 621 Delaware Ave., Wilmington 1, Del.

Indiana State Medical Association, Murat Temple, Indianapolis, Oct. 6-9. Mr. James A. Waggener, 1021 Hume Mansur Bldg., Indianapolis 4, Executive Secretary.

National Rehabilitation Association, Statler-Hilton Hotel, Boston, Oct. 26-28. Mr. Edward D. Callahan, 14 Court Square, Boston 8, Conference Chairman.

National Safety Congress and Exposition, Chicago, Oct. 19-23. For information write: National Safety Council 425 N. Michigan, Chicago 11.

New England Society of Allergy, Longwood Towers, Boston, Oct. 28. For information, write NESA, 300 Longwood Ave., Boston.

New Hampshire Medical Society, Equinox House, Manchester, Vt., *Oct. 1-4. Mr. Hamilton S. Putnam, 18 School St., Concord, N. H.,* Executive Secretary.

Osler Society of St. Louis City Hospital, Bellevue-Stratford and Jefferson Medical College, Philadelphia, Oct. 26-27. Dr. Jack Barrow, *110 S. Central, St. Louis 5, Secretary-Treasurer.*

Pacific Coast Obstetrical & Gynecological Society, St. Francis Hotel, San Francisco, Oct. 21-24. Dr. Donald W. de Carle, 2000 Van Ness Ave., San Francisco, Chairman.

Pacific Northwest Society of Pathologists (Fall Meeting), Gearhart, Ore., Oct. 15-17. Dr. Nelson R. Niles, U. of Oregon Med. School, Portland 1, Ore., Secretary.

Pennsylvania, Medical Society of the State of, Penn-Sheraton Hotel, Pittsburgh, Oct. 18-23. Mr. Lester H. Perry, 230 State St., Harrisburg, Pa., Executive Director.

Southern Psychiatric Association, Sheraton-Dallas Hotel, Dallas, Texas, Oct. 4-6. Dr. Richard C. Proctor, Dept. of Psychiatry, Bowman Gray School of Medicine, Winston-Salem, N. C., Secretary-Treasurer.

Tri-State Medical Assembly, Confederate Memorial Medical Center, Shreveport, La., Oct. 2-3. Dr. J. W. Wilson Jr., 940 Margaret Place, Shreveport, La., Secretary-Treasurer.

Vermont State Medical Society, Equinox House, Manchester, Oct. 1-4. Mr. *Getty Page, 128 Merchants Row,* Rutland, Vt., *Executive Secretary.*

Virginia, Medical Society of, Equinox House, Roanoke, Oct. 4-5. Mr. Robert I. Howard, 4205 Dover Rd., Richmond 21, Va.

Western Industrial Medical Association, Inc., Statler Hotel, Los *Angeles, Oct. 2-3. Dr. A. C. Remington, 9851 Sepulveda Blvd.,* Los Angeles 45, Secretary.

Western Orthopedic Association, Brown Palace Hotel, Denver, Oct. 18-22. Vi Mathiesen, 354 21st St., Oakland 12, Calif., Executive Secretary.

November

Academy of Medicine of Cleveland Seminar on Recent Advances in Diagnosis and Therapy of Malignant Disease, Cleveland, Nov. 1-19. Dr. H. S. Van Ordstrand, 2009 Adelbert Rd., Cleveland 6, Chairman.

American Academy for Cerebral Palsy, Statler Hilton Hotel, Los Angeles, Nov. 30-Dec. 2. Dr. Glidden L. Brooks, Brown University, Providence 12, R. I., Secretary.

American Association of Blood Banks, Edgewater Beach Hotel, Chicago, Nov. 4-7. Dr. John B. Alsever, Southwest Blood Banks, 1211 W. Washington St., Phoenix, Ariz., Secretary.

American Clinical and Climatological Association, The Homestead, Hot Springs, Va., Nov. 2-4. *Dr. F. Tremaint Billings, 420 Medical Arts* Bldg., Nashville, Tenn., Secretary.

American College of Chest Physicians, Dallas, Texas, Nov. 29-30. Mr. Murray Kornfeld, 112 E. Chestnut St., Chicago 11, Executive *Secretary.*

American Fracture Association, Roosevelt Hotel, New Orleans, Nov. 1-5. Dr. H. W. Wellmerling, 610 Griesheim Bldg., Bloomington, Ill., Executive Secretary.

American Medical Women's Association, Arlington Hotel, Hot Springs, Ark., Nov. 12-15. Mrs. Lillian T. Majally, 1790 Broadway, New York 19, Executive Secretary.

Association of American Medical Colleges, Edgewater Beach Hotel, Chicago, Nov. 2-4. Dr. Ward Darley, 2530 Ridge Ave., Evanston, Ill., Executive Director.

Association of Military Surgeons of the United States, Mayflower Hotel, Washington, D. C., Nov. 8-11. Lt. Col. George M. Beam, AUS, Ret., Suite 718, New Medical Bldg., 1726 Eye St., N. W., Washington 6, D. C., Executive Secretary.

Central Society for Clinical Research, Drake Hotel, Chicago, Nov. 6-7. Dr. Austin S. Weisberger, 2065 Adelbert Rd., Cleveland 6, Secretary.

(Continued on page 34)

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MENTAL ILLNESS, REVERSIBLE AND IRREVERSIBLE

Franklin G. Ebaugh, M.D., Denver

Emotionally disturbed patients commonly progress along a path that begins with nebulous complaints in doctors' offices and continues with accidents, delinquencies, troubles with family and police, unemployment, alcoholism, and either suicide or institutional adjustment. The path can be reversed, but such reversal involves immensely difficult personal and social problems. The logical approach would be to attack emotional disturbance at its point and time of origin. If it cannot be stopped there, systematic efforts must be made to reverse the trend at whatever stage may have been reached. In any case, the progress of the patient toward prolonged or permanent institutional life should be halted if possible, and he should work toward the reestablishment of a healthy, dynamic relation to the community.

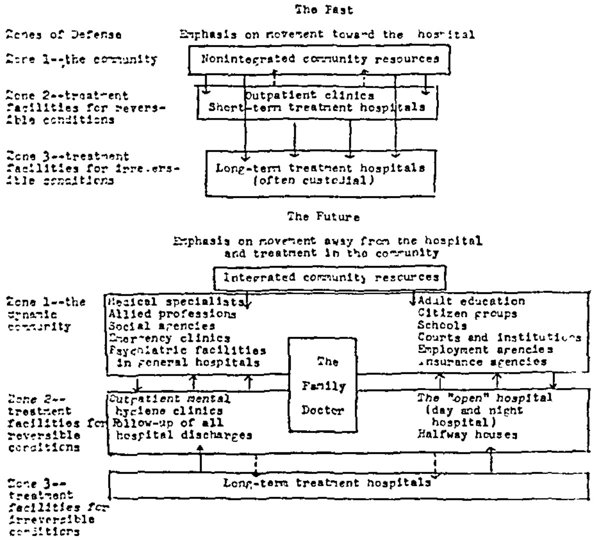
IN THE midst of the enlightened clamor in the lay press today about the staggering human and monetary cost of mental illness in the United States, I become increasingly concerned about what I choose to term the "dead zone" in the mental illness program—the vast area of untapped resources where, as in the eye of the hurricane, the sound does not penetrate and the spark of action remains unstruck. In my opinion it is only by restoring life to this "dead zone" that we may reverse the previously irreversible, both the course of a patient's mental illness itself and the limitations of society's attitudes toward it. It is only partly lack of skill, motivation, manpower, and money which has made us unable, thus far, to form an unyielding battle line between the emotionally ill citizen of the community and the "point of no return," which too often means a life completed without hope in a hospital for long-term treatment of the mentally ill.

It is important not only for the lay public but also for the general and specialized medical practitioner to adopt an extended philosophy in dealing with the increasing loss of human resources as a result of crowding persons into inadequately staffed hospitals for the mentally ill. There is no question that more and better trained personnel, more money, and better equipment for the long-term treatment facility represent part of the issue; this remains one line of attack on mental illness and, like any emergency measure, these things are essential today. We must start where we are; we cannot wish away or disown our history, which in any case reflects a steady line of progress of which we may be proud.

Nevertheless, if we are to accept the challenge of our better knowledge and therapeutic methods, we must face, courageously and clearly, the fact that, in the massive proportions in which it exists today, the long-term treatment facility or custodial hospital is a monument to failure. This is true just as surely as the remaining hospitals for treatment of advanced tuberculosis in the United States are monuments to past social and medical failure. The plague of tuberculosis has submitted to systematic preventive attack at the dynamic community level, and the "mopping up process" is well under way. We could do no better than to take a leaf from this particular history book, in attacking emotional disturbance at its point and time of origin. Perhaps, then, the overflowing mental hospital will also fade from its place of prominence on our national scene.

Cycle of Irreversibility

Toward this end, consider the essentials of advance lines of defense in terms of the reversibility or irreversibility of a patient's mental illness. The cycle of irreversibility is well known to many. It begins with the hiatus between the onset of disabling mental illness and appropriate treatment. This hiatus is too often filled with repeated failure experiences for the patient, panic leading to the conviction that he cannot be helped, increasing disruption of those environmental relationships which mean security and self-esteem to him, and often the total loss of a life role to which he may return when he has improved. It is often during this period that the patient trails from doctor to doctor with nebulous hypochondriacal and psychosomatic complaints, through the divorce and police courts, through the employment agencies, down the path of alcoholism, or into other equally personally and socially destructive adjustments. Even should he or his friends understand the implications of his difficulties, help is frequently unavailable at the community level without disruption of his entire way of life. He is in the "dead zone," where the resources are all around him, tantalizingly, and where professional people are eager to help; yet help is piecemeal, without continuity, or unavailing, costly, and wasteful.


The Past
Zones of Defense
Emphasis on movement toward the hospital
Zone 1--the community
Nonintegrated community resources
Zone 2--treatment facilities for reversible conditions
Outpatient clinics
Short-term treatment hospitals
Zone 3--treatment facilities for irreversible conditions
Long-term treatment hospitals (often custodial)
The Future
Emphasis on movement away from the hospital and treatment in the community
Integrated community resources
Zone 1--the dynamic community
Medical specialists
Allied professions
Social agencies
Emergency clinics
Psychiatric facilities in general hospitals
Adult education
Citizen groups
Schools
Courts and institutions
Employment agencies
Insurance agencies
The Family Doctor
Zone 2--treatment facilities for reversible conditions
Outpatient mental hygiene clinics
Follow-up of all hospital discharges
The "open" hospital (day and night hospital)
Halfway houses
Zone 3--treatment facilities for irreversible conditions
Long-term treatment hospitals

Schema of approach to mental health problems.

Much later, the patient may reach an intensive-treatment facility, where efforts in his behalf are better integrated and where, if he is fortunate, his illness may still prove reversible. There is, however, the long road back, the rebuilding of a shattered life structure, the problem of resisting firmly imprinted neurotic habits of adjustment, and the need to "live down" what ever has been antisocial in his illness. Furthermore, he must make the change from the hospital to a full functioning life in the environment in one big jump, because there are too few operating plans for progressive rehabilitation. Perhaps the first stumbling block returns him to the hospital, and this time he cannot "come back"; he has started on the irreversible path to the long-term treatment facility or custodial institution, where he may remain the rest of his life.

Granted, this story is told in too many absolutes; it is exaggerated for impact. Yet it provides a paradigm for the problem of community treatment of mental illness, and it is true in an astounding number of cases.

Reversibility and Zones of Defense

Reversibility, on the other hand, requires a radical change in those past and present trends which define the hospital as the major zone of defense; even the intensive-treatment facility should be relegated to a position of last resort, prior to semipermanent institutionalization. Reversibility is movement away from the hospital, treatment of personality disorders in the midst of the dynamic forces which produce them, at a community level. In this context, the family doctor becomes the central focus. Through him the communication takes place; around him, other treatment resources are organized, with primary emphasis on outpatient clinics, psychiatric facilities in general hospitals, and "open" hospitals for psychiatric patients who benefit from partial but not total participation in the community. The family doctor necessarily becomes chairman of the board, for he retains the closest contact with the community. In this context, and in return for this additional responsibility, he has for the first time the resources to fulfill emotional needs in his patients which he has long recognized. Such a program lifts a punishing load of frustration from the shoulders of the busy general physician.

The schematic presentation in the figure compares the zones of defense against mental illness as they have existed in the past and as they should exist in the future, in the context of treatment of patients within the community. The shift will include changes in quality which will be discussed shortly, but the emphasis is also on quantity—the realignment of our strength at the first and second zones rather than at the third zone of defense.

The magnitude of the problem may be realized when one considers that, in the United States on an average day, the number of persons hospitalized with psychiatric disorders equals the number of those hospitalized with all other illnesses combined. Further, of these mental illnesses, more than half represent nonorganic schizophrenias (there is an honest difference of opinion in this area), depressive states, or severe psychoneuroses. In addition to this there are untold ambulatory cases, in private care or receiving no treatment whatever. The probably conservative estimate that one of 12 infants will suffer from mental disease in the later course of his life and that one of every 16 Americans is now mentally ill does not consider the psychological components in psychosomatic ailments (asthma, allergies, migraine, rhinitis, urticaria, neurodermatitis, ulcerative colitis, peptic ulcer, nonglandular obesity, essential hypertension, etc.), nor does it include the 20,000 suicides each year. Accident-proneness, delinquency, crime, marital discord, and divorce, as well as such problems as impotence and frigidity, raise the estimate to astronomical proportions. Further, there are countless cases of minor compulsions, private phobias, and transient hysteriform simulations of certain diseases.

One must then consider the pain which the individual with emotional disturbance sustains and the effect of this on his family and associates, on his career and his aspirations, and on his socioeconomic status. The ramifications are of massive social significance.

Data from the National Committee Against Mental Illness (1957) estimate the annual cost of mental illness to be more than 4 billion dollars per year, or an average of $1,100 per patient. This figure includes loss in patient earnings and in federal income-tax revenue, maintenance of Veterans Administration patients in public mental hospitals, compensation and pension payments to veterans, construction and renovation of state mental hospital facilities, hospital care for mentally defective and epileptic patients, and public assistance for mentally ill and defective persons.

Major Lines of Defense

Let us return now to consideration of our major lines of defense against this staggering national liability: (1) the community approach (the most neglected for a number of years), (2) the intermediate or "reversible treatment" approach (the outpatient clinic, the "open" hospital, and the halfway house), and (3) the long-term hospitalization or "irreversible treatment" approach.

My contention that the first two zones of defense are in need of further improvement (signs of such improvement are already all around us) and that the large mental hospital programs should be deemphasized is not new. In the early 1850's, members of the American Psychiatric Association, then known as the Association of Superintendents of American Asylums for the Insane, stressed the desirability of small hospitals, with a capacity not greater than 250 patients. That their recommendations had little support is evidenced by our large mental hospitals today. Now again, in this radically changing world, the applicability of the "bricks and mortar" approach (larger and larger hospitals) should be questioned.

Another problem confronting mental hospitals is that they cannot be staffed, not only because professional personnel are not available and remuneration is lower but also because some hospitals are located in areas which offer the least desirable living conditions. This is particularly true of some of our VA facilities for patients with chronic neuropsychiatric conditions. Only 15 states have more than 50% of the total number of physicians needed to staff their mental institutions. On the national average the supply of registered nurses is calculated to be only 19.4% adequate; of social workers, 36.4%; and of psychologists, 65%. Even the number of attendants, the least highly trained of the necessary ward personnel, is only 80% of that desired. Small hospitals should be constructed, closer to university medical schools and more populated areas. Not only does this assure that more interest will be accorded to the long-term patient and that hospital staffing will be better but it also derives the multiple benefits of treating the patient "close to home."

In the intermediate area, which I have chosen to label the zone of reversible treatment, at least two improvements are desirable: the number of mental hygiene clinics should be increased and improved facilities for treating emergent psychiatric problems should be developed.

It is estimated that there should be at least one full-time mental health clinic for every 50,000 persons, a total of about 3,300 clinics for the United States. At present there are only about 1,200 such clinics in the entire country, and about half of these give only part-time service. One state has no clinic. Some states have only one or at most two. More than 50% of the mental hygiene clinics are located in the Northeast, which has only 25% of the population. Furthermore, many of the existing clinics are not properly spaced to accommodate the needs of surrounding areas.

Policy changes in already functioning clinics, with screening of emergent cases and perhaps also intensified methods of therapy, would increase efficiency in handling problems. As frequently happens now, waiting lists of applications for treatment extend from six months to two years into the future; by the time applicants can receive help, a large percentage of problems will have resolved themselves, perhaps by bypassing the clinic and proceeding into the third zone, the long-term treatment facility. Where is the immediate help for the acutely ill, perhaps suicidal patient? Many times, as shown[1] at the Bronx Municipal Hospital emergency psychiatric clinic, immediate diagnosis and therapy can prevent a patient from decompensating further and can obviate long-term hospitalization. The Bronx emergency clinic represents a new and seemingly highly successful approach, which might well be duplicated in other communities. In fact this concept might be considered a cornerstone of the first zone, or community approach.

Recently, some definite advances have been made in the community zone of approach to emotional problems. Psychiatric wards are being opened in general hospitals, and in some areas the emotionally ill are not kept separate from the medical and surgical patients. This approach has at least two excellent effects: 1. It improves the psychiatric patient's state of mind about his own illness, while proving to others that the patient is not a wild, "crazy," maniacal person; thus, it helps dispel this destructive misconception from the public mind. 2. Physicians who are not psychiatrists may assimilate more specialized knowledge about approaching and managing the emotionally ill patient. Today there are still too many physicians who do not wish to understand and accept mental illness in their patients. In this regard, I suspect that what superficially appears to be prejudice is more accurately to be understood as an adaptive reaction to the frustration of attempting to deal with emotional problems in patients without the proper facilities. The only solution for the general physician has been to ignore and deny the issue. Closer cooperation and day-to-day rapport will help to erase much of the mystery and misunderstanding in the relationships between nonpsychiatrists and "head-shrinkers." We work with the same clay.

Other experimental programs at the community level have also been successful thus far. The day and night hospitals have demonstrated that some patients can be gainfully employed in occupations in which they achieve satisfaction and can play a normal role in the work area, although they may not yet be ready to return to family relationships which involve conflict situations.

Halfway houses, for the patient released from a large institution, help him to find himself again in society and to gain confidence in his ability to respond and function adequately, without the full impact of the pressures of everyday life. Facilities of this kind, in particular, could be expanded in many communities at minimal cost.

Comment

Throughout this paper, I trust, I have expressed my own firm conviction that it is possible to manage our mental health problem with the serenity and consistency we achieve in many other areas, to accept it as an integrated part of our national life rather than relegating it to the isolated status of something we sporadically and helplessly worry about. The direction in which the solutions lie is clear, and the diagrams are very nearly complete. For many patients, until very recently, the large and often custodial hospital was a dead end, spelling the waste of 20 to 50 years of remaining life span. Now, there is a more dynamic approach to therapy, and with the aid of psychopharmacological agents, utilization of the dynamic community milieu, and immediate treatment near home, fewer persons will be lost to society. At one time, the mental hospital was a humane and enlightened concept in the treatment of mental illness, infinitely preferable to a prejudiced and destructive outside environment. Time and pioneering effort have altered this situation, until the dynamic community has become a vast untapped therapeutic resource. The moment has come, therefore, to reverse the trend of movement toward the hospital and encourage movement away from the hospital, to reverse what was previously irreversible.

1801 High St.

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THE SURGICAL APPROACH TO HIATAL HERNIA IN THE ELDERLY PATIENT.—Equal anatomic restoration of the crura and the cardioesophageal angle can be accomplished from either above or below the diaphragm. The advantage of the abdominal procedure is that it may lead to the recognition and correction of other intraabdominal lesions. Because most elderly patients have decreased pulmonary function, the abdominal procedure is better tolerated. Intercostal neuralgia is an occasional sequel of the thoracic procedure. For these reasons an abdominal approach is usually advisable in the elderly patient.—C. C. Craighead, M.D., and R. C. Reyes, M.D., The Surgical Approach to Hiatal Hernia in the Patient Past 60 Years of Age, *The American Journal of Gastroenterology,* July, 1959.

SWEAT PATTERNS AND SKIN TEMPERATURES IN PATIENTS WITH BRAIN AND SPINAL CORD LESIONS

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The status of the sympathetic nervous system, as manifested in sweat production and skin temperature, was studied in 30 patients with various lesions of the brain and spinal cord. In group 1, consisting of six poliomyelitis patients, the ability to sweat and to make vasomotor adjustments was found normal with few exceptions. In group 2, consisting of six patients with brain disease, two showed abnormal patterns of skin temperature and/or sweating. In group 3, consisting of ten patients with spinal cord compression below the level of the eighth cervical segment (C-8), both skin temperature and sweating showed numerous abnormal patterns. In group 4, consisting of eight males with spinal cord compression at or above C-8, anhidrosis was extensive in one and complete in all the others; only two had normal patterns of skin temperature. The distribution of the autonomic fibers that control sweating does not coincide with that of the fibers that control vasomotor activity.

Kottke and Stillwell,[1] Abramson,[2] and Stenpart[3] have reported that hyperactivity of the sympathetic nervous system after anterior poliomyelitis may cause abnormal vasoconstriction in the feet and legs, resulting in coldness, cyanosis, sweating, and pain when the patient is in a cold environment. This reaction to a cold environment had caused definite disability to the patients but was relieved by depression of sympathetic activity induced with the use of dehydrogenated ergot, alkaloids, or tolazoline (Priscoline) hydrochloride. The question arose of whether these symptoms disappeared or were still present after many years, and it was decided to investigate this problem further.

In addition another study[4] had reported that hypofunction of the sympathetic nervous system occurred after unilateral as well as bilateral anterolateral chordotomy. Vasomotor and sudomotor function may be dissociated by lesions in the anterolateral quadrant of the spinal cord during intractable pain. Also, the autonomic fibers are more widely distributed in the anterolateral column of the spinal cord than has been thought. Therefore the present investigation was begun to study the vasomotor disturbances of the autonomic pathways in the spinal cord and brain of patients after trauma.

Material and Methods

Four groups of patients were studied. Group 1 consisted of six patients with residual anterior poliomyelitis which had been present from 14 months to 36 years. Group 2 consisted of six patients with various diseases of the brain, with associated paresis or paralysis due to burns, tumors, fractures, or cerebral vascular accidents. In group 3 were 10 patients with compression of the spinal cord below the eighth cervical segment, and in group 4 were 8 patients who had compression of the cord at or above the level of the eighth cervical segment.

Skin Temperatures.—The basal metabolic rates and the skin temperatures of the fingers and toes were determined in each patient.

Before the tests the subjects fasted for 15 hours. During the tests they wore lightweight short pajamas and lay supine on comfortable beds. Data were obtained in a room in which the constant temperature was 25.5 C (78 F) and the relative humidity 40%. The temperatures of the plantar surface of the first and third toes of both feet and the volar side of the distal phalanges of the first and third fingers were determined by means of copper-constantin thermocouples. The observations were made at intervals of 10 minutes for one to two hours.

In the normal person there is a gradient of skin temperature from the head to the feet, with the lowest skin temperatures in the toes. It has been shown too that the skin temperature of the toes will depend on the initial basal heat or the basal metabolic rate. This gradient of skin temperature is present constantly, although it is less when the basal metabolic rate is particularly high. Reversal of this gradient between the skin temperatures of the toes and the fingers was considered to exist when the average temperature of the toes exceeded the average temperature of the fingers by 1.5 C (2.7 F) or more in the room at a temperature of 25.5 C. Such a reversal was first observed after surgical removal of sympathetic ganglions.

In order to evaluate peripheral vasoconstrictor activity a number of the patients were transferred to a cold room where the temperature was main-

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tained at 20 C (68 F). They were exposed to this temperature for 30 to 40 minutes. Impairment of vasoconstriction was indicated when the skin temperatures decreased less than 2.5 C (4.5 F).

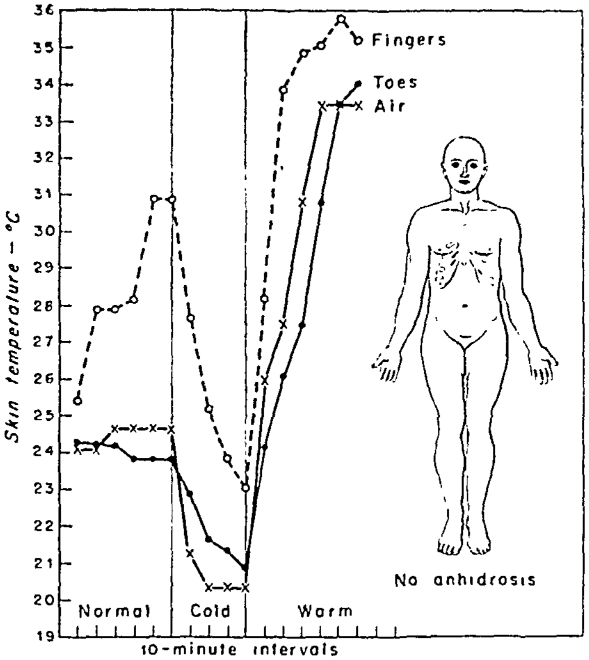

Fig. 1.—Effect of changes of environmental temperature on skin temperature of fingers and toes of patient with anterior poliomyelitis. Complete sweating occurred during thermoregulatory test.

Sweating Test.—The cobalt chloride method of determining the region of anhidrosis was used. Cobalt chloride in a saturated alcoholic solution is deep blue but turns to bright pink on addition of water. The alcoholic solution was striped over the area to be examined; an aluminum heating cabinet large enough to cover the entire body except the head, containing a series of incandescent light bulbs which maintain a temperature of about 140 F, was placed over the patient; and in 10 minutes, or whenever sweating occurred, the stripes became a bright pink. The change in color of the stripes indicated the varying degrees of sweating with considerable accuracy. Lack of change in color indicated anhidrosis.

Results

Group 1: Patients with Residual Anterior Poliomyelitis.—The average age of the six patients (two women and four men) with residual anterior poliomyelitis in group 1 was 31 years, with a range from 13 to 54 years. The basal metabolic rates ranged from —19 to +3%.

The normal pattern of skin temperatures with the fingers higher than the toes was observed in all except one patient, in whom transplantation of the biceps femoris had been done. Normal vasoconstriction occurred in the cold room and normal vasodilatation in the hot room (fig. 1).

Sweating occurred over the entire body in all the patients except one. The exception, a 54-year-old woman who had had poliomyelitis 36 years previously, was found to sweat only on the arms and the back of the legs. However, the pattern of skin temperatures of her fingers and toes was not changed significantly from the normal in spite of the anhidrosis (fig. 2).

Group 2: Various Diseases of the Brain.—The average age of six patients (one woman and five men) with brain disease was 40 years, with a range from 19 to 59 years.

The normal pattern of skin temperatures was observed in all but two cases. One patient, aged 19 years, who had right-sided spastic hemiplegia and partial aphasia showed some evidence of impairment of the vasoconstrictor fibers in the fingers of both hands, as the skin temperature of the fingers of the right hand decreased only 1.7 C (3 F) in the cold room and that of the fingers of the left hand did not decrease. More important was the fact that sweating occurred except on the lateral portion of the left thigh and the lateral aspect of the right calf. The second patient, aged 43 years, had had a skull fracture that involved both sides of the parietal and frontal regions, with subsequent left-sided hemiplegia. Although he had a normal pattern of sweating, there was evidence of slight impairment of the vasoconstrictor fibers of the left toes and fingers.

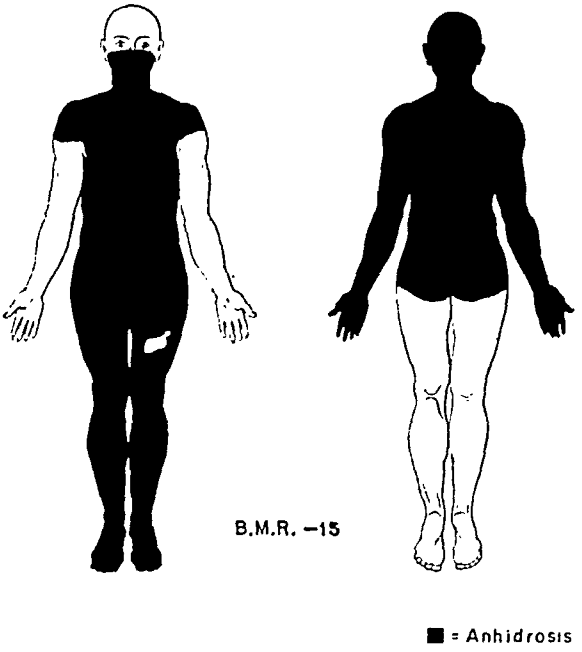

Fig. 2.—Anhidrosis in patient 36 years after anterior poliomyelitis with no reversal of skin temperature of toes (hands, 24.8 and 24.6 C [76.6 and 76.3 F], toes, 25.2 C [77.4 F]).

Group 3: Compression of the Spinal Cord Below the Level of the Eighth Cervical Segment.—The ages of 10 patients (3 women and 7 men) with spinal cord compression below the level of the eighth cervical segment averaged 29 years and ranged from 19 to 56 years. They had varied patterns of both skin temperatures and sweating. Some of these variations were thought to be due to subsequent surgical procedures such as decompression, laminectomy, anterolateral chordotomy, and rhizotomy (table 1).

In three patients (cases 1, 2, and 3) the pattern of the skin temperatures was normal, although one patient had no areas of anhidrosis, the second had anhidrosis from the level of the umbilicus down on the right and from the midthigh down on the left, and the third had anhidrosis of both arms, with only slight sweating on the lateral aspect of the chest. Both a laminectomy and a rhizotomy had been done on the second patient. The third patient had had a fracture of the neck of the first rib.

In four patients in this group a reversal of the skin temperature of the toes occurred; it was associated with anhidrosis on the right foot in two of the patients (cases 4 and 5) and with anhidrosis from the level of the umbilicus down in the other two (cases 6 and 7) (fig. 3).

TABLE 1.—*Data from Patients with Traumatic Lesions of the Spinal Cord Below the Eighth Cervical Segment*

		Skin Temperature						
			Decrease in Cold Room, C					
			Toes		Fingers			
Case	Age, Yr. and Sex	Pattern	R	L	R	L	Anhidrosis	Level and Type of Injury
1	21, M	Normal	5.6	6.3	3.9	3.3	None	T-11, laminectomy
	23, M		3.4	3.6	1.9	2.5	None	
2	56, M	Normal	4.3	5.3	3.3	6.5	Umbilicus down on right, mid thigh down on left	T-3 to T-5, laminectomy; T-4 and T-5, rhizotomy
3	27, M	Normal	4.6	2.8	4.1	3.0	Slight, lateral aspect of chest, both arms	T-11, fracture of neck of first rib; T-10 to T-12, bilateral laminectomy
4	19, F	Reversal on right foot	1.6	5.3	4.7	5.5	Right foot	T-10 to L-1, laminectomy
5	22, M	Reversal	1.8	1.4	2.6	4.0	Right foot	T-5, anterolateral chordotomy
6	35, M	Reversal	1.1	2.1	3.5	3.8	Umbilicus down	T-6, laminectomy
7	30, M	Reversal	1.2	1.2	3.4	4.5	Umbilicus down	T-4, complete transection of spinal cord
8	46, M	Impairment of vasoconstrictor fibers of feet and hands	2.2	2.5	1.7	1.0	T-2 down, hands distal to wrist	T-2, fracture of body and lamina; cord two-thirds lacerated
9	17, M	Impairment of vasoconstrictor fibers of feet and hands	1.3	2.2	0.4	1.6	T-3 down	C-8 to T-1, incomplete transection of spinal cord
10	33, F	Impairment of vasoconstrictor fibers of right hand	6.7	5.5	1.6	4.2	Right arm, hand, foot; left arm, foot, and lateral aspect of left leg	T-1 and T-2, myelitis; laminectomy; right anterolateral chordotomy

In two patients evidence of impairment of the vasoconstrictor fibers of the feet and hands was noted, with anhidrosis from the second and third thoracic segments respectively. There was also evidence of impairment of the vasoconstrictor fibers of the right hand in one patient, with anhidrosis of the right arm and hand, left arm, both feet, and the lateral aspect of the left leg. This patient had undergone a right anterolateral chordotomy.

Group 4: Compression of the Cord At or Above the Level of the Eighth Cervical Segment.—The ages of the eight males with spinal cord compression at or above the level of the eighth cervical segment averaged 22 years and ranged from 6 to 44 years (table 2). Two of these patients had normal patterns of skin temperatures with complete anhidrosis (fig. 4, *left*). The rest had impairment of the vasoconstrictor fibers either of the feet or the hands or both, with reversal of the skin temperatures of the toes in only one patient. Complete anhidrosis was present in all except one patient (case 18); this patient had anhidrosis except on the left side of the face and neck and the left shoulder and arm (fig. 4, *right*). This patient had a reversal of the skin temperatures of the left toes and impairment of the vasoconstrictor fibers of the right hand but not of the left.

Comment

The patients with residual anterior poliomyelitis had normal vasoconstriction and dilatation, and complete sweating occurred in all of these patients except the one who had been paralyzed for 36 years and had not had any operations. However, no vasoconstrictor impairment was present in this patient. Apparently after a considerable period of time the hyperactivity of the sympathetic nervous system subsides.

In patients with various brain injuries there was a dissociation between the vasoconstrictor and the sweating fibers, since impairment of the vasoconstrictor fibers was evident in association with sweating over the entire body.

In the third group, composed of patients with injuries to the spinal cord below the level of the eighth cervical segment, only one patient had a normal sweating pattern; the rest had partial sweating patterns which could be correlated to the injury and the subsequent surgical procedures. The evidence of impairment of the vasoconstrictor fibers and the anhidrotic pattern were, in all but one patient, of the usual type; that is, anhidrosis of the feet with reversal of the skin temperature of the toes. The one exception (case 2) had a normal skin temperature pattern and anhidrosis from the level of the umbilicus down on the right and the midthigh down on the left. Thus damage of the sweating fibers and not of the vasoconstrictor fibers was evident.

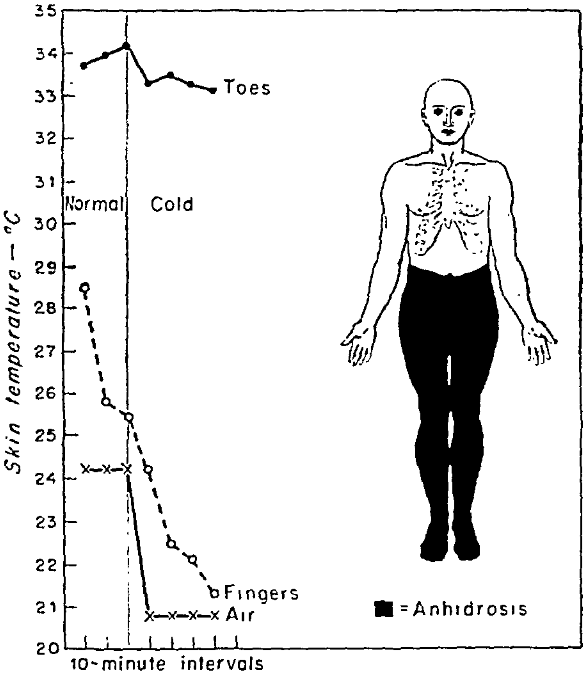

Fig. 3 (case 7).—Reversal of skin temperature of fingers and toes and decrease of only 1 C in toes and 4 C in fingers in cold room, after transection of spinal cord at fourth thoracic segment. Anhidrosis extended from level of umbilicus down.

TABLE 2.—*Data from Patients with Traumatic Lesions of the Spinal Cord At or Above the Eighth Cervical Segment**

			Skin Temperature				
			Decrease in Cold Room, C				
			Toes		Fingers		
Case	Age, Yr. and Sex	Impairment of Fibers in Vasoconstrictor	R	L	R	L	Level of Injury
11	21, M	Left foot, both hands	3.1	1.8	2.0	1.3	C-7 to T-2
12	21, M	Feet, hands	3.5 2.1	2.2 2.2	0.6 1.2	1.1 1.7	C-5 and C-6
13	21, M	Left hand	4.2	3.0	4.0	1.3	C-4 to C-6
14	19, M	Right foot, both hands	2.4	2.7	1.6	1.9	C-5 to C-7
15	44, M	Left foot, both hands	3.2	0	1.5	0.8	C-6 and C-7
16	22, M	Normal pattern	3.0	2.8	3.8	3.8	C-6 and C-7
17	25, M	Normal pattern	4.1	4.7	3.4	4.2	C-7 to T-2
18	6, M	Feet, right hand, reversal	0.4	2.1	0.9	8.5	C-8

* All patients had complete anhidrosis except case 18, who sweated on the left side of the face and neck and the left shoulder, arm, and hand.

In the fourth group all of the patients but one had complete anhidrosis over the body, and the mouth temperature rose 2 F (1.1 C) in 10 to 12 minutes while they were under the "baker." In the one exception anhidrosis was complete over the body except for the left side of the head, neck, shoulder, arm, and hand, and the skin temperatures of this extremity decreased 8.5 C (15.3 F) in the cold room. This correlation of sweating and vaso-

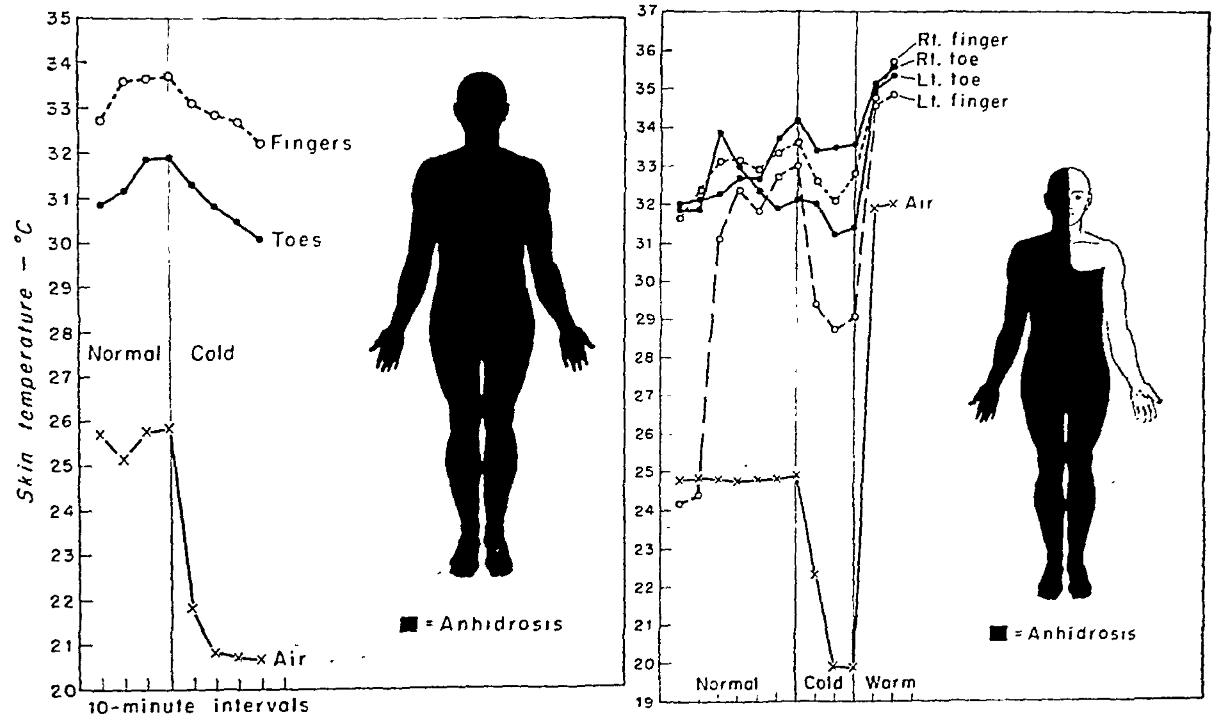

Fig. 4.—*Left* (case 11), normal pattern of skin temperatures, with decrease of 1.3 C (2.3 F) in fingers and 1.8 C (3.2 F) in toes in cold room, in patient with cord lesion above eighth cervical segment and complete anhidrosis. *Right* (case 18), reversal of skin temperature of toes in comparison to that of fingers on left hand where sweating occurred. Note decrease of 4.5 C (8.1 F) in fingers of left hand in cold room.

constriction was thought to be a striking example of the interdependence of sudomotor and vasoconstrictor fibers and a classic demonstration of the compensatory mechanism of the sympathetic nervous system in the regulation of body heat. It also might indicate the peripheral distribution of sudomotor and vasoconstrictor fibers relative to the thoracic outlet. It might be well to mention that these patients, because of inability to sweat, are difficult to care for; circulatory collapse may occur if they are subjected to a warm environment.

Summary

Sweating patterns and skin temperatures of 30 patients with lesions of the spinal cord and brain were determined under basal conditions at constant temperatures of 25.5 and 20 C. Complete sweating occurred in patients with residual poliomyelitis and brain injuries, and nearly complete sweating in some with spinal cord injuries below the level of the third thoracic segment. A group with spinal cord injuries below the level of the eighth cervical segment showed partial lack of sweating, which coincided partly with the level of injury and surgical procedures, while those with injuries at or above the eighth cervical segment of the cord had complete lack of sweating.

In some of the patients with spinal cord injuries the vasoconstrictor fibers but not the sweating fibers were damaged; this seems to indicate a variation in the distribution of these fibers in the spinal cord.

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PREVOCATIONAL EVALUATION AND REHABILITATION IN A GENERAL HOSPITAL

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The nonprofessional services of a hospital were found to provide a rich variety of work situations for use in a rehabilitation program. Of 44 consecutive patients who started this program, 41 completed it and 31 were successfully rehabilitated, even though an average of 23 months had elapsed since the initial injury. The setting was an acute general hospital. Three cases are described to illustrate the feasibility of using the hospital barber shop, accounting department, pharmacy, and similar facilities to test and restore the patient's occupational potentialities.

The return of the seriously injured workman to employment is an obvious goal for any rehabilitation center. All too often this goal is not achieved. For example, in the Commonwealth of Massachusetts a law has been passed which makes it mandatory for workmen's compensation insurance carriers to report all cases of patients who are not back at work six months after the injury. These reports go to the Industrial Accident Rehabilitation Board, which reviews the case histories and refers the patient to a rehabilitation facility for further evaluation and treatment. This legislation is not based on any lack of proper medical or surgical treatment which is readily available to the injured workman, but, rather, to the fact that in spite of excellent medical and surgical care all too often the injured workman does not return to employment. The rehabilitation of this group of patients is a real challenge to the physiatrist. The purpose of the presentation is to record a method of prevocational evaluation and work therapy as set up in an acute general hospital rehabilitation facility. Forty-four consecutive cases were selected for this study, representing all the workmen's compensation cases seen and evaluated, vocationally, during recent years at the Bay State Medical Rehabilitation Clinic. All patients were referred to some nonprofessional service department of the hospital for a work therapy program, which will be described.

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Chairman's address, read before the Section on Physical Medicine at the 108th Annual Meeting of the American Medical Association, Atlantic City, June 9, 1959.

Method of Evaluation

An injured workman who has not returned to work because of an injury believes that he needs treatment and usually is not completely satisfied, in some way, with the result of medical therapy. For this reason, rehabilitation, I believe, is more apt to be successful if a physician directs the program and is the leader of the rehabilitation team.

TABLE 1.—*Nonprofessional Services Provided at Massachusetts General Hospital*

- Accounting
- Animal laboratory
- Architects
- Barber shop
- Carpentry
- Chemistry laboratory
- Central supply
- Food store
- General housekeeping
- Instrument repair
- Kitchen
- Laundry
- Maintenance
- Neurosurgery laboratory
- Orthopedic shop
- Paint shop
- Patients Accounts
- Patients library
- Pharmacy
- Photography
- Plumbing
- Print shop
- Reception desk
- Refrigeration repair
- Upper store
- X-ray switchboard

It has often been said that a rehabilitation center should be separated from a general hospital for psychological reasons. We have deliberately chosen an acute hospital, however, with all its facilities for diagnosis and treatment readily available. At the same time, we have utilized actual work situations in the hospital for prevocational testing and work tolerance production.

Rehabilitation Team

In our program we have as the leader a physiatrist who provides the medical evaluation, with consultants as needed. He also directs the therapeutic program in all stages. A coordinator is necessary to take care of administrative details, make arrangements with third parties, and see that the team works together and that reports are sent out. Other members include physical therapists, social workers, and a clinical psychologist who conducts aptitude, interest, and other psychological tests. A psychiatrist acts as a consultant and discusses all cases with the team. An occupational therapist directs the hospital prevocational and work therapy program. A vocational counselor is responsible for establishing the vocational goals and the actual placement in jobs.

Hospital Work Therapy Program

At the Massachusetts General Hospital, as at any general hospital, many nonprofessional services are necessary for running the hospital (table 1). Our occupational therapist has established a cooperative relation with the foremen of the various nonprofessional services. The foreman is instructed in the placement of an injured workman under treatment in his department for purposes of evaluation of his abilities and interests and aptitude for that particular type of work and, also, for the purpose of establishing the patient's work tolerance. In the beginning, forms were utilized for evaluation by the department head; but, in the course of time, these have been discarded as unnecessary except for indoctrination of new employees. The departments are not used for the purpose of developing vocational skills or for production of work. The placement is used to develop, gradually, an eight-hour working tolerance through actual work and to instill a real work interest.

An interesting side light has been the keen interest of the foremen in this project. For the first time, after years of service in a hospital, they have become a part of an active therapeutic program in contact with patients.

Placement in work therapy is generally accompanied by physical rehabilitation in the form of conditioning exercises. We use a progressive resistance exercise table for this purpose. This technique has the advantage of providing a measurement of strength in terms of pounds which helps to evaluate progress.

A unique feature of this work therapy program has been an evaluation in terms of the physical work requirements of the different jobs by a consultant who worked with the individual foreman and established the physical requirements of many of the jobs in the hospital. Our physiatrist, physical therapist, and occupational therapist were also trained, similarly, to establish the physical abilities of patients in this fashion.[1] This combined evaluation of physical abilities and job requirements makes it possible to place a person in a suitable work situation corresponding to his physical capacities.

TABLE 2.—*Results for Fourteen Patients with Fractures*

Age, Yr.	Occupation	Hospital Work Therapy	End-result*
36	Farmer	Accounting	Bookkeeping
25	Window washer	Accounting	Accounting school (bookkeeping job)
46	Freight handler	Laundry	Old job
54	Construction laborer	Store	Old job
64	Domestic	Housekeeping	Unemployed
48	Truck driver	Paint shop	Cooking school (chef)
45	Construction carpenter	Carpentry	Picture framing
18	Shipper	Accounting	Accounting school (bookkeeping job)
30	Laborer	Print shop	Old job
29	Sander	Pharmacy	Presser
29	Steeplejack	Refrigeration	Refrigeration
57	Track repair	Plumbing	Old job
51	Telephone exchange	Accounting	Old job
58	Mechanic	Pharmacy (accounting)	Bench assembly

* Former job—5; new job—8; failure—1.

Patient Data

Diagnostic Categories.—The patients who were injured at work and went through this program had a variety of injuries. Three patients were not included because of lack of follow-up. There were 12 patients (29%) with serious back injuries with or without ruptured nucleus pulposus of the intervertebral disk. Some of these had operations, including laminectomy and spinal fusions. Fourteen patients (34%) suffered fractures, of the lower extremities in 10 and of the upper in 4. Four amputees (10%) were referred, with different varieties and levels of amputation sites. Eleven patients (27%) with other injuries were included, such as crushed hands, neck sprains, three brachial plexus or nerve injuries, and one case of upper extremity thermal burns. All patients were in the employable age group. The youngest was 17 and the oldest 64 years of age; there were two females.

Table 3.—*Results for Twelve Patients with Back Injuries*

Operation	Age, Yr.	Occupation	Interval, Mo.	Hospital Work Therapy	End-result*
...	45	Truck driver	19	Plumbing	...
...	44	Construction	45	Housekeeping; store	Former job
Disk	30	Bowling machines	24	Store	Former job
...	28	R.r. worker	30	Store	Former job
Disk fusion	42	Truck helper	36	Instrument repairs	...
...	33	Laborer	15	Elevator; housekeeping	Night watchman
...	47	R.r. construction carpenter	21	Plumbing	Former job
Disk fusion	56	Truck driver	32	Elevator; pharmacy	...
Disk fusion	51	Laborer	30	Instrument repairs; pharmacy, elevator	...
...	50	Mason	15	Elevator	Elevator operator
...	41	Truck driver	12	Store	...
Disk	31	Plasterer	8	Accounting	Accountant at hospital
		Average	24		

* Former job—4; new job—3; watchman—1; elevator operator—1; bookkeeper—1; failures—5 (truck driver, 4; laborer, 1).

Interval After Injury.—These patients represent those with severe injuries who failed to return to employment after six months. In most instances, the patients were referred to our rehabilitation clinic one to three years after the date of injury, with an occasional exception of patients referred earlier for rehabilitation by the insurance carrier when change of employment would be necessary, as, for example, in the case of the amputee. The average interval was 23 months.

Table 4.—*Results for Eleven Patients with Crush and Soft Tissue Injuries*

Age, Yr.	Type of Injury	Previous Occupation	Hospital Work Therapy	End-result*
41	Trunk and pelvis	Laborer	Refrigeration	No job (traumatic neurosis)
39	Upper extremity laceration	Meat cutter	Butcher shop	Previous job
58	Leg crush	Truck driver	Instrument repairs	Taxi driver
25	Arm crush	Crane oiler	Barber shop	Barber school; placed as barber
26	Hand crush	Paper machine	Store	Stock clerk
61	Neck strain	Mechanic	Pharmacy	Referred for placement; no job
45	Hand crush	Roofer	Carpentry; instrument repairs; maintenance	Mechanics helper
28	Syringomyelia	Roundhouse worker	Dietary office	Business school; no placement
29	Neck strain; hysterical triplegia	Steeplejack	Refrigeration	Refrigeration repair
45	Brain, subdural	Office manager	Accounting	Business school; job
49	Burn of hands	Laborer	Elevator	Elevator operator

* Previous job—1; new job—5; vocational training—3; failure—2.

Length of Treatment.—These particular patients were all ambulatory and usually came in for daily treatments five days a week with an occasional exception of a patient for whom transportation was a difficulty and therefore treatments were less frequent. Usually, treatments were continued for at least a month, an occasional patient remaining under treatment for as long as three months; one patient continued on our program for eight months.

Occupation at Time of Injury.—A large variety of occupations were represented in this study. The list includes, for example, a farmer, a tree surgeon, a window washer, a freight handler, a truck driver, a waiter, a railroad worker, a cabinet maker, a roofer, a steeplejack, a meat cutter, a machine operator, and an office manager.

Results

Of the 41 patients who completed the evaluation and therapy described, 11 returned to the same type of work with their previous employer. Fourteen were successfully placed in a new occupation and six were set up in a vocational training program under the direction of the Massachusetts Rehabilitation Commission. Thus, 75% were successfully rehabilitated. Of the 10 who failed to return to employment, 5 had a diagnosis of a back injury and 4 had been operated on, another had a recurrence of rheumatoid arthritis preventing his return to work, one had multiple soft tissue injuries, one had a fractured wrist, and another had a new injury before returning to work. A psychiatric diagnosis precluded work for one patient. Results are given in detail in tables 2 through 5. Three illustrative cases of successful rehabilitation are given below.

Report of Cases

CASE 1 (*fractured hip*).—A 58-year-old garage mechanic suffered a fractured hip at work. He was treated with closed reduction and bed rest at an outside hospital and was able to use crutches but developed severe disabling pain in the hip. It was consequently decided that an arthroplasty should be done, with insertion of an Austin-Moore prosthesis. Convalescence from this was good and he was referred five months later for further rehabilitation therapy. At the time of referral, he was walking with a cane and driving his own car. In his prevocational evaluation it was found that he was able to do simple addition and subtraction satisfactorily but not multiplication or division. He had a three-hour standing tolerance and was referred to the hospital work therapy program. His first placement was in the pharmacy, where he seemed to have some aptitude for work with machines. He also demonstrated a full day's working tolerance sitting at work operating a foot lever. A second trial of work placement was in the accounting department, where it was found that he was cooperative and dependable. After three weeks of the work therapy program he was seen by the vocational counselor, who found employment for him in a bookkeeping capacity.

TABLE 5.—*Results for Twelve Amputees*

Age, Yr.	Type of Amputation*	Previous Occupation	Hospital Work Therapy	End-result
19	BE	Cabinet maker	Accounting	Accounting school
45	AE	Machine operator	Instrument repairs	Previous job
46	AE	Wool comber	Instrument repairs; carpentry	Watchman for previous employer
63	AK	Cement manufacturer	Instrument repairs; refrigeration	Unemployed (arthritis)

* BE = below elbow; AE = above elbow; AK = above knee.

CASE 2 (*crush of arm*).—A 23-year-old operator of a crane injured his right hand when it was drawn into the construction machinery he was oiling on June 11, 1956. He had immediate surgical care in a nearby hospital. A diagnosis was made of comminuted fractures of the radius and ulna and severe skin and tendon injuries to the forearm. In November of the same year he was referred to the Bay State Medical Rehabilitation Clinic, where he was taken out of immobilization as per his surgeon's instructions and started on physical therapy to mobilize and strengthen his stiff joints and weak muscles. He had physical therapy three times a week for one year. During the last months of treatment he was evaluated for vocational goals since there would be some definite residual lack of function of his right hand. This prevocational evaluation was done in the occupational therapy department and his studies included aptitude and interest testing and intelligence tests plus counseling by the vocational counselor. He was found to be of normal intelligence, with interests and aptitudes in the mechanical field. The patient was very much interested in becoming a barber in spite of his less than normal hand function. He was accordingly placed in the hospital barber shop and given further tests of his skills and interests; finally, he was enrolled in a barber's school under the plan of the Massachusetts Rehabilitation Commission.

In 1958, he had further surgery for removal of internal fixation, followed by some additional physical and occupational therapy to regain as much function as could be secured after this brief post-operative period. He continued with his study of barbering and was finally employed as a barber full time. He had been on the job for three weeks and was doing well at the time of the follow-up report in February, 1959.

CASE 3 (*multiple fractures*).—A 25-year-old window washer had had several severe falls in carrying out his work, the last one occurring four and one-half months prior to admission, when he received multiple fractures. In his prevocational evaluation he received aptitude, interest, and psychometric tests which indicated normal mental ability, with reasonable clerical skills. Prevocational testing included a trial in the accounting department of the hospital, where it was found that he could follow instructions well, had good work output, and was congenial with those in the department. He was able to use an electric calculator and his supervisor was satisfied with his work. In view of this, the vocational counselor enrolled him in a business school where he finished a business course. After finishing training, he was employed as a bookkeeper and earned $55 a week. In addition to this, the patient is going to night school to work for a degree in business administration, hoping after he finishes to increase his wage potential to as much as $70 a week.

Summary

A method of rehabilitating the seriously injured worker back to employment was established in an acute general hospital rehabilitation facility. The placement of patients in a work situation for prevocational evaluation and the development of work capacity formed essential elements of this program.

The nonprofessional services of a hospital provided a rich variety of work situations. The program was directed by the rehabilitation team of the general hospital center.

Of 44 consecutive referrals, on the average of 23 months post-injury, 41 injured workers completed the evaluation and work therapy program. Thirty-one (75%) of the 41 patients were successfully rehabilitated.

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CHALLENGE TO THE PRIVATE PHYSICIAN IN THE EPIDEMIOLOGY OF SYPHILIS

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and
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Reported cases of infectious syphilis declined between the peak years of 1947 and 1954, but since 1954 the number has remained practically unchanged each year. Public health officials understand well the responsibility of the general practitioner to protect the confidence of the physician-patient relationship, as well as his reluctance to suggest that his private patient be interviewed for contacts by a third person, but such personnel have been trained to keep all information in strict confidence and to bring to the investigation the same high professional standards as apply to diagnosis and treatment. If the trend of infectious syphilis is to turn down again, physicians must report all cases to the health department and arrange to have patients interviewed for information about sexual contacts. Examples of effective cooperation along these lines are cited.

Progress against syphilis in the United States during the past 20 years has been tremendous. The control program frequently has been referred to as one of the most successful in recent public health history. Ample statistical proof of progress is evident in such long-range indexes as trends in mortality and disability due to syphilis. For example, in 1939, when the national venereal disease control program was launched, there were 14,500 deaths due to syphilis reported (11.8 per 100,000 population). In 1956, the most recent year for which complete mortality data are available, there were 3,870 deaths from syphilis reported in the nation (2.3 per 100,000). Similarly, first admissions of syphilitic psychotic patients to mental hospitals have declined from 7,800 in 1939 (5.5 per 100,000 population) to 1,663 in 1955 (1.0 per 100,000 population).

Reported cases of infectious syphilis also declined consistently and significantly between the peak year of 1947 and 1954. However, since 1954 the number of cases of infectious syphilis reported each year has remained practically unchanged.

Figure 1 shows the trend line of reported primary and secondary syphilis in the United States since 1950. Venereal disease control personnel are most concerned with this plateau at the high level of between 6,300 and 6,800 reported cases of infectious syphilis per year. The word "reported" must be emphasized, because a large number of privately treated syphilitic patients have not been reported for one reason or another. Studies show that in some areas private physicians are reporting to health authorities as little as 5% of the syphilitic patients they treat—in other areas as much as 50%. It is estimated that approximately 25% of all privately treated syphilitic patients are reported to health departments. Thus, the data plotted in figure 1, based on incomplete reporting, represent a minimum of the true syphilis attack rate in the United States. And, of course, cases of syphilis which occur but are not diagnosed in the infectious stage of the disease are not included.

Venereal disease control officers and syphilologists agree that, to reduce the incidence of infectious syphilis and return this line to a downward trend, a much higher percentage of cases of infectious syphilis must be reported, and all reported patients in the infectious stage must be interviewed for sexual contacts so that all such contacts may be found, examined, and treated if infected. If cases are not reported it is not possible for the health department to offer a trained interviewer to obtain the names of all their sexual contacts, and if this is not done the infected contacts will continue to spread the infection. Only by complete case reporting and interviewing can we attain real control of this disease and progress toward the goal of its eventual eradication.

Failure to continue the downward trend of reported early syphilis since 1954 cannot be explained by decreased public health epidemiologic activities, because these have been maintained at levels which formerly produced significant declines. Studies have shown that, since the development of slow-absorption penicillin for the treatment of syphilis, private physicians have been treating a higher proportion of infectious syphilitic patients. Furthermore, only a small percentage of these patients with early syphilis are being interviewed adequately for sexual contacts. Figure 2 shows the number of cases of infectious syphilis reported by private physicians and by clinics in the five-year period during which practically no progress has been made against re-

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ducing the incidence of syphilis. This chart also shows the number of patients interviewed and the number not interviewed for sexual contacts for each reporting source.

Of the 14,428 cases of infectious syphilis reported by private physicians during the five-year period only 2,400 patients (16.6% of the total number reported) were interviewed by a trained interviewer to obtain the names and addresses of contacts. Surely, many private physicians must have advised their patients to send in their spouses for examination. This is a simple procedure requiring no special effort or training. However, it is much more difficult to obtain the names of other sexual contacts who may have introduced the infection into the family group. Such interviewing requires special training and experience.

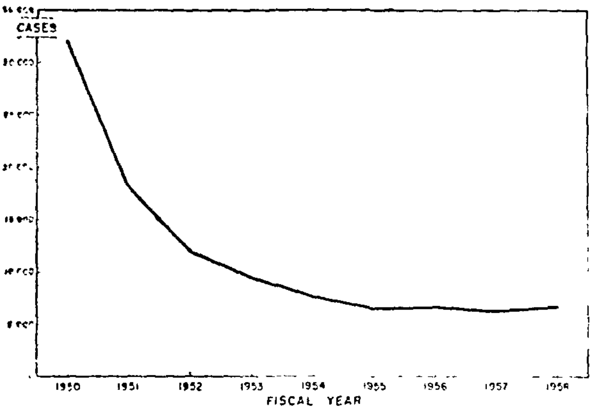

Fig. 1.—Reported cases of primary and secondary syphilis in the continental United States, 1950-1958.

In contrast to the foregoing figures, of the 19,251 patients with primary and secondary cases reported by clinics and hospitals, 16,845 (86.3%) were interviewed for contacts. Although there is still room for improvement in the interviewing of clinic and hospital patients, particularly the latter, the greatest need is for more adequate interviewing of private patients and subsequent examination of their sexual contacts. Such action would help significantly to reduce the continuing high incidence of syphilis. As discussed later, this requires close cooperation between the private physician and the health department.

Case-Finding Opportunities Lost

The epidemiology of infectious syphilis is the responsibility of health departments, but, before discussing the necessary cooperation of private physicians, let us consider what is lost by failure to obtain contacts of private patients. By applying national average indexes of case-finding productivity to the 12,028 cases of infectious syphilis reported by private physicians but not interviewed for sexual contacts, it is conservatively estimated that interviewing of these patients by trained personnel would have yielded 40,173 named contacts during the five-year period under consideration (fig. 3). Routine follow-up procedures and examination of these 40,173 contacts would have yielded 2,868 cases of primary and secondary syphilis, 1,606 cases of early latent syphilis, and 594 cases of other syphilis. It should be emphasized that these estimated undiscovered cases are minimal, since they are calculated from the base line of reported cases only.

On the brighter side there are many specific examples of excellent cooperation between private physicians and health departments in several areas where venereal disease outbreaks have occurred. For example, an extensive outbreak of syphilis occurred recently in a southwestern state. The original case of secondary syphilis was reported to the health department by a private physician who requested epidemiologic aid from the health department. A trained interviewer went to work, and a chain of infection of 79 cases of infectious syphilis was subsequently uncovered. Throughout the outbreak there was continuous communication and consultation between local physicians and the county health officer. Only through teamwork between private physicians and health department personnel was this outbreak brought under control. How many

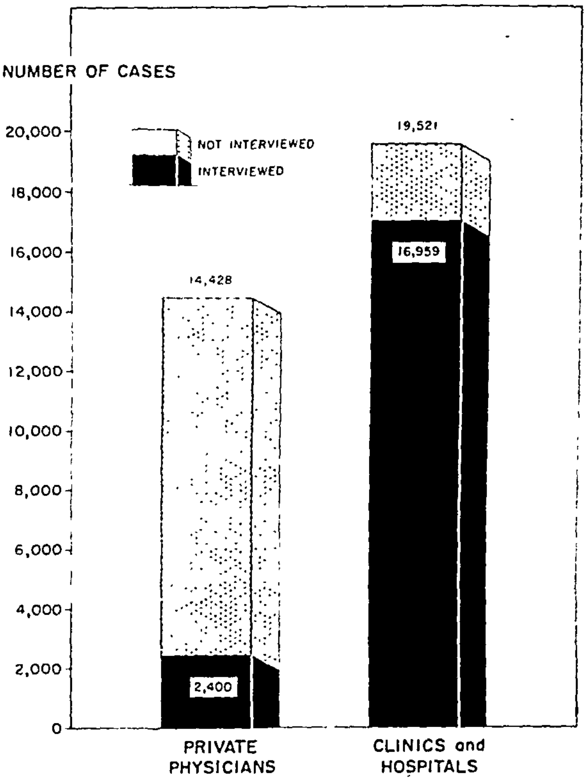

Fig. 2.—Cases of primary and secondary syphilis obtained by reporting source and interviewing sexual contacts, in the United States, *fiscal years 1954-1958.*

other equally extensive outbreaks have not been uncovered because a patient with an early case of syphilis was neither reported nor interviewed can only be guessed.

In addition to epidemiologic teamwork between private physicians and health officers in localized outbreaks of syphilis are a few statewide programs in which private physicians work side by side with the health department in a cooperative plan of control. One southern state has been particularly successful in such an effort. The first step in the program was to approach the state medical society and enlist its active participation in the control program. The reporting program was approved by the state medical society and discussed at local medical society meetings throughout the state. Simple reporting procedures were established for the convenience of physicians, and positive blood tests from public health laboratories were used to stimulate case reporting. Every physician in the state received a letter from the state health officer explaining the program and urging him to report any cases of syphilis. The splendid results of this program are shown in figure 4. More than 10 times as many cases of syphilis were reported by private physicians in the three years after the initiation in 1956 of the case-reporting program than in the previous three years. The chart refers to patients with syphilis reported in all stages of the disease.

Since the most important stages of the disease from an epidemiologic and control point of view are the primary and secondary stages, an integral part of the private physician–participation program was a sustained effort to interview all patients with these stages of disease for sexual contacts and to bring all contacts to the physician for examination. Concurrently with the general case-reporting program private physicians were especially urged to report patients with early cases of syphilis promptly and to have them interviewed for sexual contacts by a trained interviewer. In fact, each physician reporting a case of infectious syphilis was visited by a representative of the health department who offered to interview the patient. The gratifying results of this phase of the program are shown in figure 5. This chart shows that physicians who reported cases prior to the new program were already working with the health department by having most of their patients with early cases (83%) interviewed for contacts. More important, the chart shows that after the institution of the new program not only were more private physicians reporting more cases of early syphilis but the physicians were also taking an active interest in the program by arranging for their patients to be interviewed for contacts by a trained interviewer from the health department. The percentage of patients interviewed under this program increased to 97% in the three-year period after its inauguration.

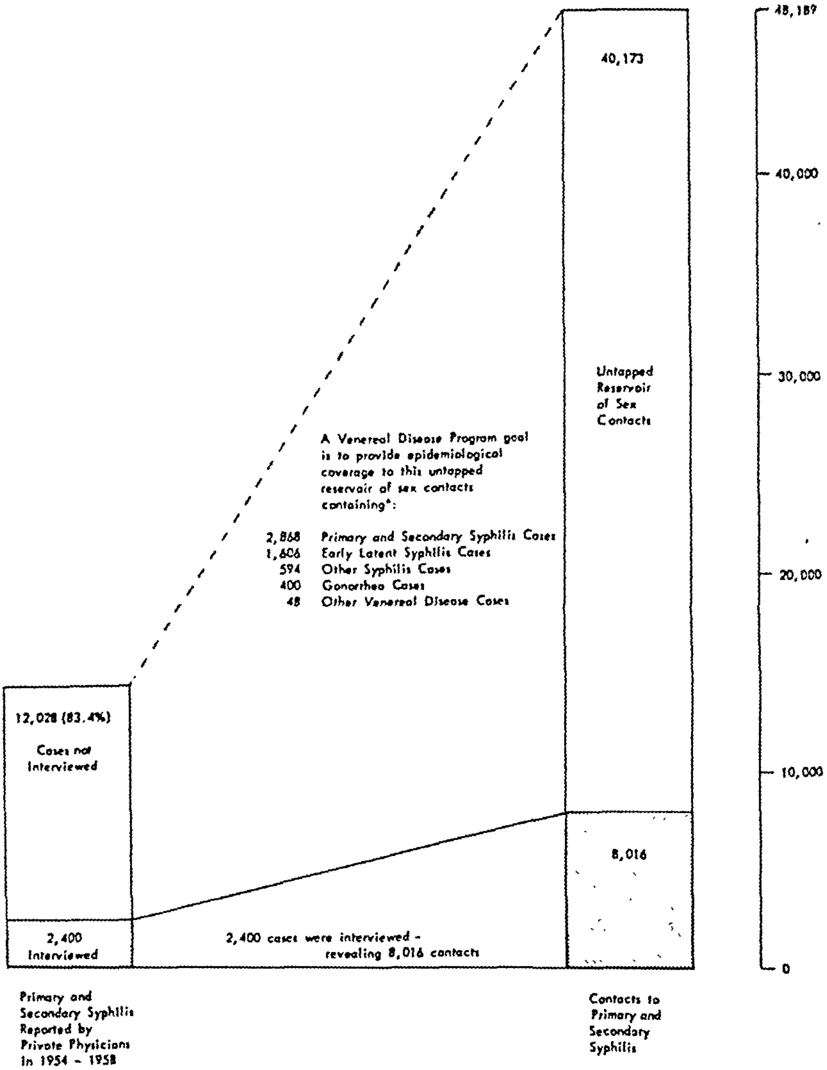

Fig. 3.—Cases of syphilis seen by private physicians. Venereal disease program goal is to provide epidemiologic coverage of untapped reservoir of sexual contacts (*figures in chart based on national contact indexes).

If this program can work in one state, it can work in others. The plan is a simple one for the physician. He need only report all cases of syphilis and arrange for all patients with early cases to be interviewed for sexual contacts by a trained interviewer.

Trained Interviewers Available

The epidemiology of infectious syphilis requires time and effort that are at the disposal of few, if any, busy physicians. A properly conducted patient interview for contacts will consume an average of 45 minutes, and the available data prove that the most successful interviewing has been done by personnel who have had special training. Such persons have been carefully selected for their tact, integrity, intelligence, interviewing ability, personality, and their understanding of the confidential nature of their work. They are available through the local health department.

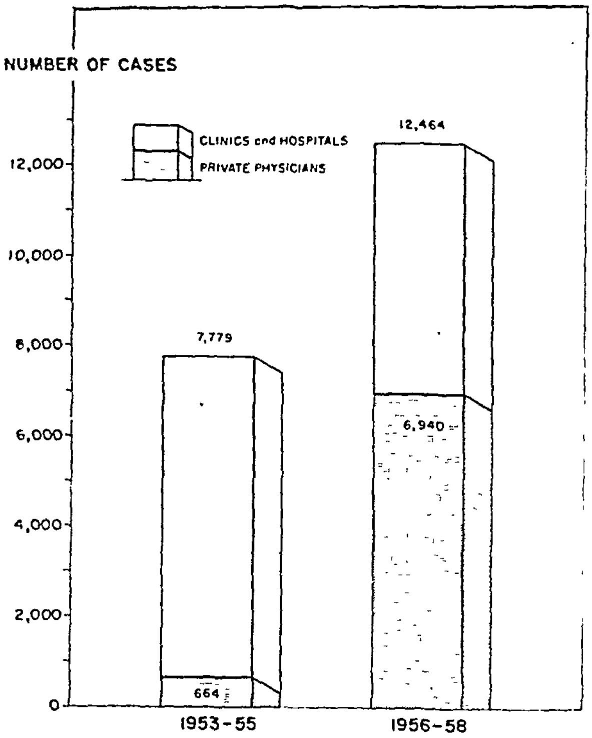

Fig. 4.—Comparison of cases of syphilis reported in southern state for fiscal years 1953-1955 and 1956-1958. Program of case reporting by private physicians was initiated in 1956.

In addition to the interviewing of patients, contacts named must be located in the field and brought to examination. Only health department personnel are able to do this adequately. Furthermore, many named contacts must be located in another city, county, or state. About 14% of all contacts named by syphilitic patients reside outside the state in which the case is diagnosed. In fact, with the increasing mobility of our population it is quite common to have contacts reported in far distant states and foreign countries. There is a national and international system of reporting such persons. Health department investigators follow their progress and bring most of them to examination and treatment if indicated. But such follow-up epidemiology cannot be carried out if the patient with the original infectious case is not interviewed.

Public health officers understand well the responsibility of the general practitioner to protect the confidence of the physician-patient relationship, as well as his reluctance to report the names of his patients with syphilis or to suggest that his private patient should be interviewed for contacts by a third person from the health department. Health department personnel concerned with venereal disease control have been trained to keep information concerning the identity of patients and contacts in strict confidence and to bring to the epidemiologic investigation the same high professional standards that are applied to diagnosis and treatment. Their approach to any person in a chain of infection considers marital problems and other social implications which might develop.

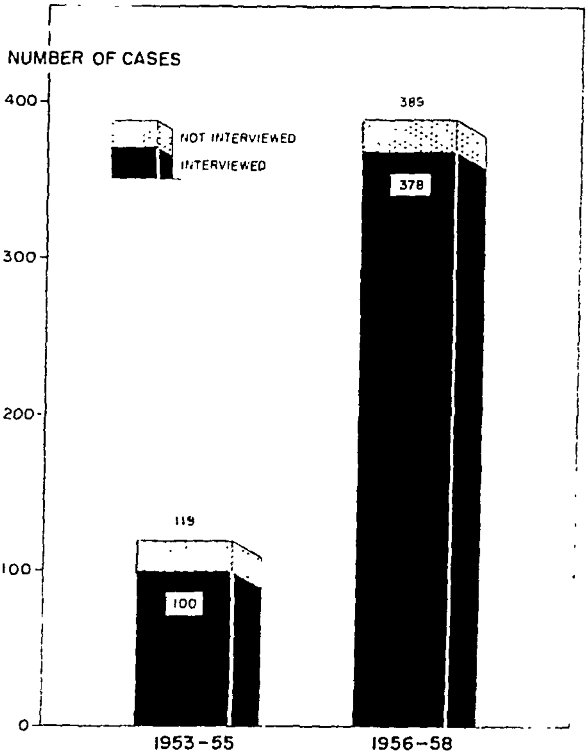

Fig. 5.—Comparison of cases of primary and secondary syphilis reported by private physicians in southern state and interviewed for sexual contacts for fiscal years 1953-1955 and 1956-1958.

Health officers, public health nurses, and other health department personnel trained in tracing contacts will cooperate in any possible way with the private physician, and the patient-physician relationship is often strengthened through their interviews. It should be stressed that the health department's approach to any private patient with syphilis is always with the knowledge and permission of the private physician. In fact, the health department representative approaches the patient in these cases as an agent of the physician.

Since the physician is busy and cannot be expected to devote the necessary time to interviewing patients for their contacts, it is most important that he call for the assistance of his local or state health department. If the trend line of infectious syphilis is to turn down again, physicians must first report all cases to the health department and arrange for health department personnel to interview their private patients for contacts. The greatest hope of further progress against syphilis in the foreseeable future lies in a private physician–health department partnership.

PHYSICAL MEDICINE AND REHABILITATION MANAGEMENT IN APHASIA

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The relation of speech activity to other forms of motor activity was studied in 58 hemiplegic patients with aphasia. They were compared with another group of 51 hemiplegics without aphasia. Impairment of speech was found to be correlated with weakness of the hand; stimuli intended to elicit verbal responses often elicited motor responses of other kinds, and many aphasic patients when permitted to get out of bed, stand, and walk seemed to improve their ability to communicate. It is concluded that motor experience is important for language experience. The motor activities of dressing and walking either facilitate speech or otherwise facilitate the learning processes connected therewith. Occupational therapy reinforces speech therapy, and the two have been combined successfully in joint therapy sessions.

A speech disturbance may be an important diagnostic sign in a wide variety of medical conditions. Every physician takes note of the patient's speech in the evaluation of his medical status. Thus, a tremulous voice may connote fear or anxiety; scanning speech may signify a cerebellar lesion; a monotonous, flat speech of diminished volume may suggest parkinsonism. In all of these examples the finding may be of diagnostic significance. However, the management of the case need not be directed to the speech disorder.

On the other hand, major speech disorders such as aphasia or dysarthria may be disabling and invariably complicate the management problem. All too often the physician manages the problem of the paralyzed limbs, as in the hemiplegic, but considers the language disorder as a phenomenon discrete from the motor disability. The objective of this paper is to relate the language disorder of aphasia to the motor disability.

Language and Motor Skills

The relationship between language and motor skill has been clearly defined by Haldane,[1] who has stated, "The human brain has two super animal activities: manual skill and logical thought. Manual skill appears to be the earlier acquisition of the two and the capacity for language and thought has grown up around it. If we breed for qualities which involve the loss of manual ability, we should more likely evolve back to the apes than up to the angels."

Further support for this view has been forthcoming from Wundt and Bloomfield,[2] who proposed that motor acts in the form of gestures have been the source of speech. They consider that manual gestures became associated with oral gestures and these produced sounds. In this view, sounds became linked with the meanings of the manual gestures and subsequently the manual gestures were eliminated. It is in this light that emphasis is placed on motor experience as essential for language experience.

The effort to deal with aphasia as a purely psychological or linguistic phenomenon will lead to inadequate management. Tools of language come out of the experience of manual function. On the other hand, the converse is also true. Walking,

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feeding oneself, dressing, and other manual skills are more effective when directed by language and conceptual behavior.

The motor or efferent aspect of speech is expressed by the coordinated activity of maxillofacial and thoracic structures, including tongue, lips, larynx, lungs, and diaphragm. However, motor output is dependent on the sensory input. The close interdependence of sensory and motor activity has been emphasized by Gooddy,[3] who states, ". . . in voluntary movement, sensation and motion form a single, indivisible, continuous process." The general senses such as touch, pain, and proprioception and the special senses such as hearing, taste, and vision interpret the external environment to the patient. The total sensory input represents the combined activity of the end-organs, peripheral nerves, tracts, and the integrative sensory cortex.

With regard to cerebral lesions, brain damage generally disturbs the sensory input at the integrative level. In order to produce an appropriate motor response there must be an appropriate sensory stimulus. It has been shown[4] experimentally that sensory loss in an extremity abolishes motor function in that limb. It does not abolish the ability of the muscle to contract, but it prevents coordinated activity such as walking or exercise of manual skills. This dysfunction is comparable to that of the patient with receptive or sensory aphasia who may retain the ability to contract the muscles for the production of speech sound but whose speech function is inadequate for communication.

On the basis of these principles of sensory input, the aphasic patient will function most effectively in an environment that is well structured. Not only the quantity but also the quality of stimulation that he receives must be predetermined. Thus, some aphasic patients should live in an environment in which noise is reduced. For training purposes it may be desirable to reduce qualitatively certain of the sensorial experiences. Thus, a quiet, darkened room may be advantageous in the relearning process. On the other hand, in some patients more than one sensory modality may be used in order to reinforce the impact on the patient's cortex. Thus, the therapeutic value of visual stimulation reinforcing auditory stimulation may have more than an arithmetic value. Its therapeutic effect may be geometric.

Quantity of stimulation must also be considered. There is both an upper and a lower level that is therapeutically desirable. Thus, a soundless room for the aphasic, as for the normal person, may be an oppressive experience. Recent experiments[5] on normal persons have shown that the reduction of sensory stimuli to a minimum may lead to serious psychic disturbances in the normal. Similar findings have been reported[6] in clinical situations. By the same token, such reduction of sensation may create further disorganization or even panic in the aphasic. Thus, the stimulus that is to be used must reach the minimum threshold which is appropriate to the level of organization of the central nervous system of the aphasic patient. This threshold will vary for each patient.

A third area in which speech as a motor function should be reviewed relates to visceral functions. The receptors and effectors which have been mentioned previously have dealt primarily with the voluntary and somatic aspects of the nervous system. Reflexes mediate activity of the respiratory, cardiovascular, and endocrine systems, which factors can modify the speech function. For example, modification in respiratory rate may reduce the volume of air for speech in the expiratory phase. Emotional lability will change the rate and tidal volume of respiration. Further, glandular activity of salivation may be inhibited by the autonomic nervous system, which may, in turn, lead to a thickened speech. Such changes reflect the intimate relationship of visceral innervation to the function of speech.

Thus far, similarities found in musculoskeletal functions such as walking and speech are rather apparent. However, there are significant differences. For example, if one walks endlessly in a circle it may be purposeless walking, but it is still recognizable walking. On the other hand, a flow of words in a sequence which has no meaning is not regarded as effective speech. Thus, a key function of speech as a means of communication is to influence the behavior of people, whereas other musculoskeletal functions may or may not serve this purpose.

Another significant difference relates to the nature of a functional increment in speech as compared to walking. If, for example, an aphasic patient is capable of relearning one or two nouns, is this as significant to the return of speech as one or two steps is to the return of walking? It is not, because as soon as the patient can take a few steps, one can predict that the patient will walk with some degree of facility, even though with a crutch. In the case of speech, one cannot as confidently predict the next increment by evaluating the accomplishment of the initial increment. This is so because, although the musculoskeletal act of enunciating words is a prerequisite of effective speech, it is not the equivalent of it. Thus, speech requires not only a motor act but also conceptualization, which represents the most complex and highest cortical activity of man. It is obvious, therefore, that in a patient in whom speech function has been seriously impaired, the rate of return may be much slower than for other motor function. This relates to a significant problem in the evaluation of speech therapy.

In a comparable situation of brain damage, our department has undertaken to evaluate 53 patients with cerebral palsy who had been on our inpatient service at Bird S. Coler Hospital.[7] We devised a system of values for some six categories of activities. These included motor functions such as walking, dressing, feeding, and going to the toilet. It also included the area of speech. The rating scales for each category were made as simple as possible and consisted of a hierarchy of items from total disability to complete independence. By the same token, we attempted to set a scale for speech, extending from total inability to communicate orally to normal communication for a particular age. In evaluating what our program had provided for these patients, it was most disturbing to find that by this rating scale the least gains had been made in the area of speech. On evaluation it became apparent that different criteria had to be established for measuring increments than those used for other musculoskeletal functions.

Rehabilitation of the Aphasic Patient

In the light of these considerations, I shall discuss some of our experiences in physical medicine and rehabilitation in the care of the aphasic patient. In the framework of the similarities between speech and other musculoskeletal functions, I have been impressed with the bodily movement which an expressive aphasic patient will employ. This will include gyrations of his head, arms, and legs in expressing the frustration that he presumably must feel in attempting to convey an idea to the listener. Because of this we have begun to study the possibility of a correlation that might exist between such aphasic speech disorders and motor function.

We have recently studied 58 hemiplegic patients with aphasia. In this group, 37 (64%) showed no motor power in the hand of the involved upper extremity. In a comparable group of 51 hemiplegics who showed no gross evidence of aphasia, only 14 (27%) showed no motor power in the hand. On the basis of this small series of cases, there would appear to be some correlation between the phenomenon of aphasia and complete loss of hand motor function.

Furthermore, we have also observed that many aphasic patients who are permitted to get out of bed and taught to stand and to walk often seem to improve their ability to speak or communicate.[3] There would appear to be some relationship between the improvement of musculoskeletal function and the improvement in speech function. We have also observed that, when an aphasic patient is asked a question, he tends to respond with a motor act. Thus, the patient may be asked if he can walk and he will tend to carry out the motor act. This might be considered to be a misinterpretation on the part of the patient. If the patient is advised not to walk and the question is again posed, the motor activity is often repeated. This may represent perseveration, but it signifies to me that a language experience, even when inappropriate, exhibits motor activity.

These observations which relate musculoskeletal function to speech function have led us empirically to the conclusion that motor experience is important for language experience. The motor act of walking or dressing may either facilitate speech or enhance the learning process that is involved in the complex signal or symbol system of verbal communication. Thus, therapeutic activity other than speech therapy may become a language experience. It is, therefore, we believe, important that the patient perform muscular activities which will reinforce his language function. In our department's treatment program, speech therapy is not necessarily restricted to the formal therapeutic session provided by a speech therapist. Rather, it is felt that all who provide care for the patient and who have developed a rapport with him also provide a form of speech therapy. We believe, therefore, that the physical and occupational therapists, in helping the patient improve his musculoskeletal function, are helping him to improve his ability for communication. We have instituted joint therapy sessions with speech and occupational therapy. In this program, motor activity is used to enhance speech therapy. Speech therapy should not be an activity that is conducted for one-half hour once, twice, or three times a week. It should, on the other hand, be an activity that is carried on daily, many hours each day, by the speech therapist, the physician, the physical therapist, the occupational therapist, the social worker, the nurse, and, perhaps most importantly, by the family itself.

Conclusions

I have attempted to view speech as a motor activity and to correlate the speech function with other musculoskeletal functions. In this framework, I believe that motor experience is important for language experience. Because speech therapy is so intimately linked with other therapy, it is important that the physician, with the assistance of the speech therapist, assume the responsibility for guiding the patient and his family relative to his speech disorder. Speech therapy should be provided not only during formal sessions but in all contact that the aphasic patient has with other human beings.

Finally, it is important that criteria should be developed in order to measure increments in the retraining of aphasic patients. Such measurements or tools will be more complicated than those for other musculoskeletal functions, because speech is dependent on many factors, namely, the biological apparatus as well as psychological, social, and environmental experiences. Thus, the development of effective measuring rods will probably require the cooperation of many disciplines, including neurology, speech therapy, psychology, sociology, and physical medicine and rehabilitation, among others.

In presenting these empirical concepts, one must understand the nature of empiricism. When empirical data become abundant to teachers and leaders of a field, it is necessary to abstract principles and concepts out of these data. I am hopeful that the field of physical medicine and rehabilitation may develop new approaches in the evaluation and management of the aphasic patient.

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MASSIVE RESECTION FOR ILEITIS

TWELVE-YEAR FOLLOW-UP OF TWO PATIENTS

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Surgical treatment of disease of the ileum sometimes involves removal of adjacent segments of jejunum and colon so extensive as to jeopardize the patient's postoperative nutritional balance. In the cases here reported two patients were studied 12 years after unusually extensive intestinal resections. One weighs 158 lb. (71.7 kg.) and is working full time although he lacks parts of the sigmoid and descending colon, the right half of the transverse colon, all of the ascending colon with cecum, all of the ileum, and all but about 60 cm. of the jejunum. The other retains about 45 cm. of jejunum and lacks the ileum, ascending colon with cecum, and half of the transverse colon; he weighs 142 lb. (64.4 kg.) and works as a truck driver. Both men compensate for poor water-absorption by a large daily intake of beverages and liquid foods, but they tolerate carbohydrates, proteins, and fats equally well. Their dietary habits and nutritional status show that they have made good adjustments to their handicap.

Many articles have appeared lately describing the successful removal of large segments of intestine for the complications of ileitis. Apparently nature's efforts to attain nutritional balance have been so effective that many of these patients have been able to enjoy comfortable and useful lives. These gratifying operative results have been made possible because of present-day advances in surgical technique, chemotherapy, studies of fluid balance, and a better understanding of intestinal physiology. The purpose of the present report is to render a 12-year follow-up study of two patients who required such extensive intestinal resections that as little as 18 in. of jejunum and small portions of the transverse colon and descending colon remained. At the time when both operations were performed (1947) and a preliminary report[1] made, a search of the literature revealed that no other patients with ileitis had had as much intestine resected.

However, the surgery for regional ileitis presents a more difficult problem than that of gangrene and extensive trauma to the intestines. In ileitis, the disease involving the intestine may be more extensive than appears evident at the time of operation. The typical patient with regional ileitis coming to surgery may be described as having a nonspecific, low-grade, inflammatory granulomatous disease of the small intestine, characterized clinically by the formation of an abdominal mass. Diarrhea, fever, and enteric fistulas are present. Contributing to the large size of the mass is the extension of the inflammation into the mesentery where edema and enlarged lymph glands are found. Not only do the inflammatory changes in the thickened and enlarged intestinal loops interfere with absorption in these involved areas but the disease has an irritating effect on the entire gastrointestinal tract, producing hypermotility of the intestines.

The end-results of massive resection are so variable that one cannot often predict which patients will obtain a good result or which will emerge from the operation showing extreme nutritional insufficiency. Not overlooking the fact that the length of intestine remaining is an important factor in determining the postoperative well-being of the patient, one is occasionally pleasantly surprised at the early and complete recoveries after some very radical operations. Fortunately, nature's compensatory mechanisms, plus the application of our increasing knowledge of nutritional requirements, have made these surgical successes possible.

Report of Cases

Case 1.—A 47-year-old man was admitted to the Boulevard Hospital on Feb. 2, 1947, with the history that in 1941 he had had a short-circuiting operation performed for regional ileitis; in 1943 periodic attacks of pain in the right lower quadrant developed, and he was admitted to a New York hospital where a second ileosigmoidostomy was performed. On Feb. 26, 24 days after admission, an ileostomy was performed for intestinal obstruction. Because of the poor condition of the patient, a mushroom catheter was inserted into a large distended loop of small intestine and a stab wound provided for its emergence in the right lower quadrant of the abdomen.

On March 20, 1947, another operation was performed. The operative procedure consisted of sectioning proximally through normal jejunum at a distance of 2 ft. from the duodenojejunal junction and removing the rest of the jejunum, the ileum, cecum, ascending colon, and hepatic flexure. A generous portion of thickened mesentery was removed with all excised intestine, and a lateral anastomosis was made between the remnant of jejunum and transverse colon. The area of the descending colon that was involved in the ileosigmoidostomies was also excised, a resection that included 8 in. of the descending colon and upper part of the sigmoid colon. Because of the extreme distention and edema of the descending colon, excision was performed according to the Rankin double-barreled colostomy technique. Postoperatively, the patient's condition immediately improved and he began consuming an enormous quantity of food. He manifested progress in every way, made an uneventful recovery, and rapidly increased in weight. He resumed his previous job as a carpenter and was able to work eight hours a day.

Twelve years after operation, in January, 1959, he weighed 158 lb. (71.7 kg.), more than before he became ill. His present occupation is that of a timekeeper, and even though he is 60 years old he is still able to perform a full day's work. In addition, he does odd jobs as a carpenter on week-ends. The bowel movements are loose and number five to six per day. They are so regulated that he has two evacuations before going to work and three to four after returning home in the evening. Thus, the condition is of no great inconvenience to him. Of course there is great thirst, especially in the evening, because of the water loss. He is strong and sleeps well throughout the night. He eats all foods except fruit juice, milk, cabbage, and spices. He even consumes three cans of beer every evening. He enjoys sweets, especially candy, and believes that this eradicates the occasional nausea he experiences in the afternoon. Meats of all kinds, even when fried, are eaten without any ill-effect. Fats do not upset his digestion, and bacon is a favorite food every day at breakfast time. The only medicament received is crude liver extract once every week hypodermically.

Laboratory data are as follows: blood sugar level 75 mg.%, blood urea level 14 mg.%, total cholesterol level 263 mg.%, cholesterol as esters 148 mg.%, total protein level 6.4 Gm.%, albumin-globulin ratio 4.0 to 2.3, carbon dioxide content 21.4 mEq. per liter, sodium level 137.6 mEq. per liter, potassium level 4.4 mEq. per liter, and chloride level 116 mEq. per liter. The blood count is normal, with a hemoglobin level of 11.9 Gm.% and 4,010,000 red blood cells. The urinalysis is essentially negative. Roentgenograms demonstrate an enormous dilatation of the remaining 2 ft. of jejunum, a compensating mechanism for the missing section.

Comment.—This patient is in unusually good health in spite of being left with only the duodenum and 2 ft. of jejunum (fig. 1). The cecum, ascending colon, right half of the transverse colon and the upper part of the sigmoid colon, and lower part of the descending colon are also missing. The portion of descending colon found diseased at operation was the result of an extension of the disease across an ileosigmoidostomy shunt. After 12 years, this case represents a complete ileitis cure since, apparently, all the diseased tissue has been eradicated. Functionally, the patient has an excellent result, considering the small amount of intestine that has been left to carry on nutrition. At first only carbohydrates were well tolerated, but later proteins and fats began to occupy a normal place in his diet. With the exception of a low blood sugar level finding, all laboratory tests show normal results.

CASE 2.–A 20-year-old man had been ill with symptoms of ileitis since he was 14 years of age. Within the past three years he had had three abdominal operations for this condition, but with no relief. On admission he weighed 117 lb. (53.1 kg.), a loss of 13 lb. (5.9 kg.) from his usual weight.

On Aug. 25, 1947, a massive intestinal resection was done, at which time there was removed a large abdominal mass consisting of inflammatory intestine and mesentery. Except for 1.5 ft. of proximal jejunum, all of the small intestine and ascending colon were diseased and therefore removed up to the middle of the transverse colon. A lateral anastomosis was made between the short jejunal remnant and the transverse colon. Postoperatively he did unusually well and was discharged from the hospital in 12 days. Two months after the operation he seemed to enjoy good health, was employed full time, and complained only of a few loose stools daily. His blood chemistry and blood count were essentially normal, and his roentgenograms already revealed a compensatory dilatation of the jejunal remnant.

About three years after operation, he began passing six to seven loose bloody stools a day. Sigmoidoscopic and roentgenographic examinations revealed ulcerative colitis in the remaining part of the large intestine. He improved under therapy consisting of antibiotics, iron, liver extract, and cortisone.

In October, 1957, he was readmitted to the hospital with rectal abscesses and severe debility. At operation the rectum was dilated for severe stenosis from scarring. Because of a low hemoglobin level, 4 pt. (1,893 cc.) of blood was given. He improved rapidly within a period of two months.

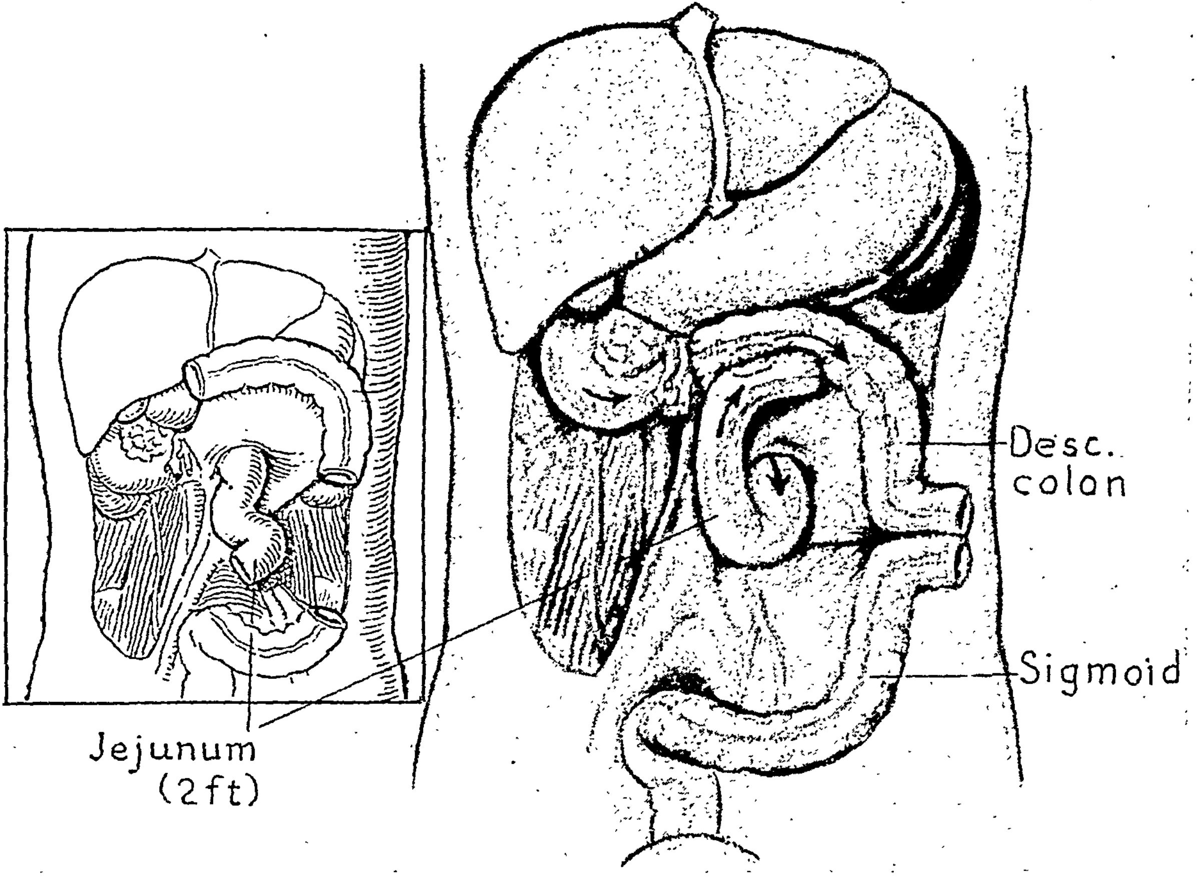

Fig. 1 (case 1).–Two feet of jejunum remain after excision of jejunum, ileum, cecum, ascending colon, right half of transverse colon, and 8 in. of descending colon and proximal sigmoid colon. Operation was transverse jejunocolostomy and Rankin double-barreled colostomy.

At the time of writing, 12 years after his massive intestinal resection, he feels that he is enjoying good health and works 8 to 10 hours a day, part of which time he drives a truck. His weight is at its optimum, 142 lb. (64.4 kg.), whereas, before operation, it was only 111 lb. (50.3 kg.). The stools are loose and number five to six a day. This creates great thirst, and he drinks tremendous amounts of fluids during the day. The only troublesome symptom is the distress from gaseous distention, at which time he notices his abdomen expand. Relief is afforded by the passing of large quantities of gas. His appetite is excellent, and he eats almost everything that the rest of the family enjoys except fresh fruit and raw milk. He particularly likes sweets, and sugar is a distinct "pick-up" for him. Meat of all kinds forms a large part of his diet; even fatty foods such as pork seem readily digestible. The only therapy is vitamin B_{12} and liver extract every one or two weeks. Gelusil tablets (containing 7.5 grains [0.5 Gm.] of magnesium trisilicate and 4 grains [0.25 Gm.] of a specially prepared nonreactive aluminum hydroxide gel) give him much relief from the gas.

Laboratory data are as follows: Blood sugar level 72 mg.%, blood urea level 13 mg.%, total cholesterol level 248 mg.%, cholesterol as esters 143 mg.%, total protein level 6.1 Gm.%, albumin-globulin ratio 3.5 to 2.6, carbon dioxide content 24.5 mEq. per liter, sodium level 132.4 mEq. per liter, potassium level 4.0 mEq. per liter, and chloride level 116.0 mEq. per liter. Recent roentgenographic studies reveal a widened duodenum and jejunal remnant. The colon, especially the transverse colon, shows the presence of colitis in an inactive state. A recent blood count showed a hemoglobin level of 7.1 Gm.% and 8,700 leukocytes per cubic millimeter. However, in spite of no symptoms from this low hemoglobin level, he was given a transfusion of 1,000 cc. of blood.

Comment.—This patient was stricken at the age of 14 years with ileitis which involved the small intestine and ascending colon. A massive resection removed all of the small intestine, leaving behind only 1.5 ft. of jejenum (fig. 2). The ascending colon, up to the middle of the transverse colon, was included in the resected specimen. Three years after the operation an attack of ulcerative colitis set in involving the remaining part of the colon down to the anus. The question of involvement of the colon in regional enteritis appears to be controversial, but regional enteritis and ulcerative colitis may coexist.[1A] However, at the time of writing the disease is quiescent except for the fact that it has been resulting in lowering of the hemoglobin level. Intestinal compensability is remarkably good in that the patient eats all foods, even fat, without distress.

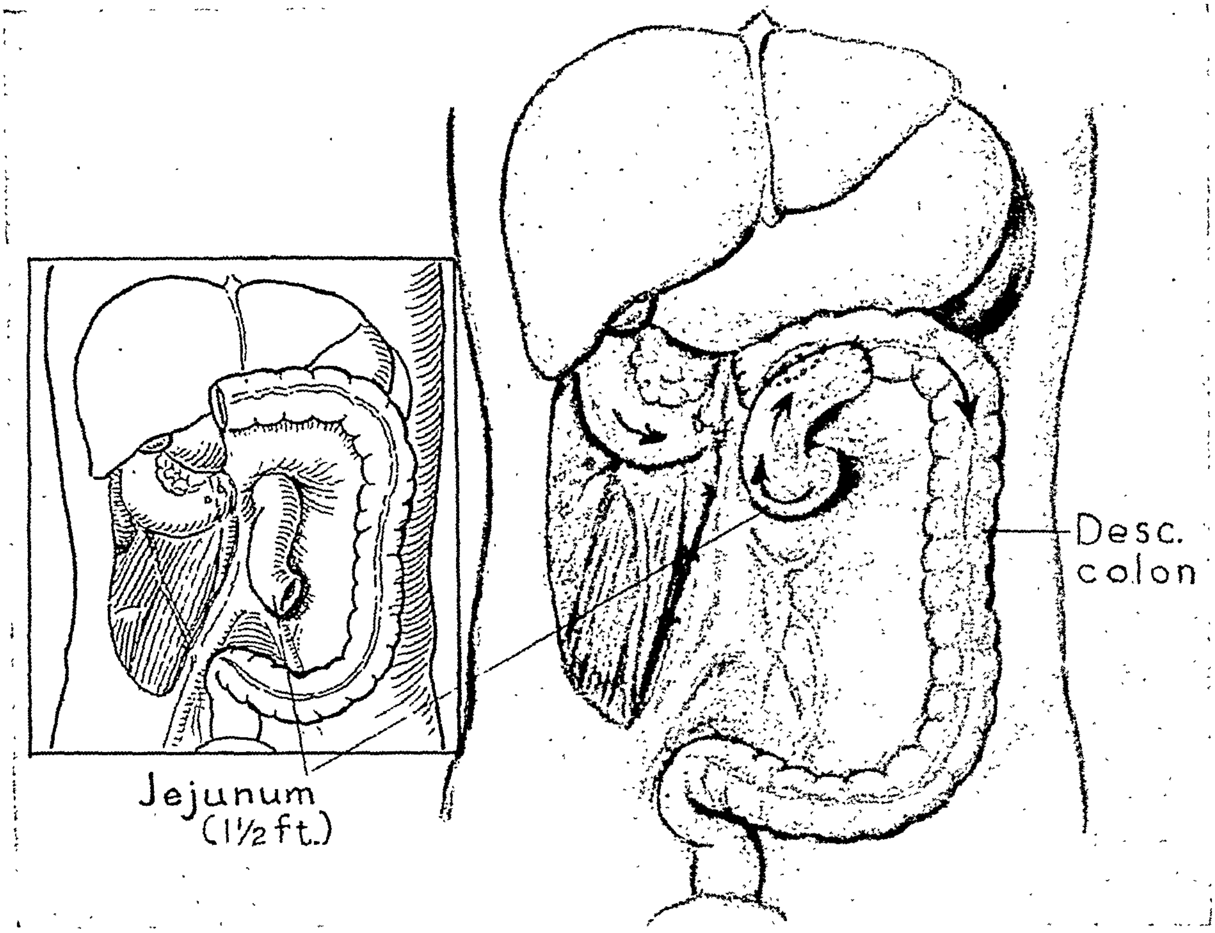

Fig. 2 (case 2).—Eighteen inches of jejunum remain after excision of jejunum, ileum, cecum, ascending colon, and right half of transverse colon. Operation was transverse jejunocolostomy and lateral anastomosis.

Pathological Physiology

In considering the causes of nutritional failure after the removal of large segments of intestine, obviously the loss of absorptive area must be given first place. But after operation the absorptive surface of the remaining intestine is greatly increased by a compensatory hypertrophy in the duodenum and the remaining jejunum. In some instances, this increase in the absorptive area of the small intestine has been estimated to reach 400%.[2] Histologically, the villi are more numerous in the duodenum and jejunum and the absorption rate is therefore greatest in these regions. The effect of this can be realized when one considers that the surface area of the intestine, averaging 0.5 sq. m., is increased by means of these villous projections to almost 10 m. Some state that the establishment of compensation is also aided by an increase in gastric secretion and that the gastric digestion rate is slowed to two hours or longer.

Undoubtedly the large intestine also plays an important role in compensation and as little as possible should be sacrificed at the time of resection. The ascending colon in particular should be retained, since its absorbing surface may help to counteract the most distressing symptom after operation, intractable diarrhea. Its action is also that of a reservoir, and by sufficient absorption of water and electrolytes the presence of the ascending colon can alter the consistency of the stools. Thus, it gradually acquires the ability to accommodate enormous stool masses and to extrude only once a day amounts up to one gallon at a time. Lillehei and Wangensteen[3] believe that water absorption takes place particularly in the terminal 30 to 40 cm. of ileum and is aided by the presence of the ileocecal valve. They feel that one can remove the colon itself without the patient's being troubled by too many stools, an argument they have advanced for encouraging complete colectomy in patients with cancer and polyps of the colon.

From a physiological standpoint, the small intestine is far more important for the absorption than the digestion of food.[4] The jejunum absorbs more fluid and sugars while the ileum absorbs the major portion of the digested proteins and fats. However, a resection of the upper half of the small intestine has no different end-results than resection of the lower half. These observations in patients who lost large segments of intestine at operation have changed many of our traditional ideas concerning intestinal physiology. One is impressed with the speed and thoroughness with which digestion takes place in the stomach, duodenum, and the proximal part of the jejunum, leaving very little digestion for the rest of the alimentary tract. No significant absorption of food occurs in the colon, although some contend that the colon contributes to the absorption of carbohydrates and proteins but not fat.[5]

Soon after massive resection, nutritional balance studies[6] carried out on human beings are in complete agreement in showing that the utilization of carbohydrates remains normal, the absorption of proteins is decreased moderately, and the absorption of fats is impaired severely. Although quantitative studies of the stool in cases of resection for ileitis show that carbohydrates are absorbed 100%, Althausen[4] has indicated that there may be some doubt regarding the accuracy of this procedure because of bacterial fermentation within the colon. Here fermentative bacteria may attack the unabsorbed carbohydrate, producing gas and organic acids; the extruded feces are then freed of carbohydrate. This may lead to a wrong conclusion concerning carbohydrate absorption.

Protein metabolism studies have uniformly shown that nitrogen balance can be maintained even though the length of remaining intestine is short. However, where nutritional failure occurs, especially soon after operation, protein metabolism is impaired. The result is a reduction of the plasma proteins, particularly the albumin fraction, and peripheral edema occurs. Since anorexia is often present, the hypoproteinemia may also be the result of a low caloric intake.

Fat is the food constituent most difficult to absorb according to all studies of metabolism. Although the bulky, rancid stools of steatorrhea are not commonly seen, these patients have diarrhea with a great loss of dietary fat in the stools. The result is deficient caloric content with its secondary effects on protein metabolism, calcium deficiency, and fat-soluble avitaminosis. The loss of calcium may result in hypocalcemia and occasionally in tetany. In some instances deficiencies in water-soluble vitamins B and C develop.

Even in patients with severe symptoms, all laboratory findings may be normal and render no clue as to the severe state of malabsorption present. In recent years, the literature has been replete with information concerning such contradictory findings. Trafford[7] has published a three and one-half year postoperative study of two patients with ileitis in whom all laboratory tests were persistently normal.

The adaptation of patients to the loss of large segments of intestine seems to improve greatly as the period of convalescence increases. As observed in both of our patients, whose conditions have been followed for a period of 12 years, fat and protein are now absorbed as readily as carbohydrates. Evidently intestinal compensation for nutrition is progressive, as manifested by both patients' being able to eat heartily of meats and fats. But the malabsorption of water remains almost unchanged and patients strive for comfort from the disturbing diarrhea by regulating their water intake according to their daily activity. Both follow the same habit acquired over the years, namely, emptying their colon of loose stools on arising and after returning from work.

Comment

A review of the literature for patients with ileitis does not reveal any follow-up study similar to this one that has been made for a period of at least 12 years. The most striking change in both of our patients has been a progressive adjustment toward being able to eat almost everything in a normal diet without any ill-effects. While immediately after operation they could digest and absorb only carbohydrates well, later their intestinal tracts became equally well adjusted to proteins and fats. The only postoperative symptom that has failed to improve has been the ability to absorb water. Even though the resulting diarrhea has not abated to any great extent, both patients have been able to regulate the time of evacuation of watery stools so that there has been little interference with their daily routine. All laboratory tests have been consistently negative with only one exception; the blood sugar findings in both patients have always remained at a low normal limit, 72 and 75 mg.%. Perhaps this is why they enjoy eating carbohydrate foods often and even feel that sugar in any form relieves their asthenia. The second patient, who also has colitis complications, occasionally shows a lowered hemoglobin level, a condition particularly evident when he suffered from perirectal abscesses.

In a general way, even though large amounts of important tissues are removed, the human body in many instances has the ability to adjust itself to altered conditions and to continue functioning efficiently. The first reason is that a great part of the tissue excised may be considered reserve tissue; not only do we possess a basic amount to carry on all the vital processes of our daily lives but an additional amount is present at all times. This can be readily seen in the field of chest surgery where, after pneumonectomy, the patient is suddenly deprived of more than half of his lung parenchyma and can still lead a fairly comfortable life. On the other hand, sufficient vital capacity is not available for those unusual physical demands such as running, jumping, and extensive pulmonary infections. The intestinal tract is similar in all these respects, and the successful recovery of the patient depends in great part on whether this basic minimum of functioning tissue is left behind.

Second, in considering intestinal equilibrium after resection, one must also bear in mind the nature of most tissues to undergo hypertrophy and hyperplasia. These compensatory changes are well known and result usually when tissues are subjected to additional demands. But such changes are possible only if the tissues are in a healthy state. Therefore, the need for removing all the pathological tissue at operation is obvious if the remaining parenchyma is to compensate unhampered.

Third, the associated structures of the intestinal tract, such as the liver and pancreas, are also involved in reestablishing intestinal absorption and digestion. The circulatory system and all the organs engaged in maintaining electrolyte balance are only a few of the other regulatory mechanisms called on for help. What other biophysical alterations may contribute to this remarkable compensatory state are as yet unknown.

Summary and Conclusions

Intestinal resection is an effective and relatively safe procedure today for the complications of ileitis, namely, obstruction, fistulas, and abscesses. Nutritional compensation is established early if no recurrence occurs or if no disease is left behind. Compensatory mechanisms are effected by dilatation of the duodenum and jejunal segment, hypertrophic changes in the intestinal villi, and a lessened need for a high caloric intake due to anorexia and weight loss.

Soon after the operation carbohydrates are well tolerated, protein only moderately, and fats not at all. Later on in the convalescent period all three are absorbed equally well. However, inadequate water absorption remains unchanged. A 12-year follow-up study of two patients, who at the time of their surgical operations had more intestinal tract resected for ileitis than any other patients up to that time, showed that, after extensive resection for ileitis, nature's generous supply of reserve tissue and great powers of adaptation and compensation make good health possible.

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NEW TREATMENT FOR ULCERATIVE COLITIS

REPORT OF A FULMINATING CASE

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After a short course of therapy with ACTH in small doses, combined treatment with gold salts, phenylbutazone, and vitamin B_{12} effected a dramatic recovery within one week. During the next two months the patient remained asymptomatic and was able to return to a virtually normal diet, including fried foods, green vegetables, and fresh fruits. Roentgenograms of the colon three months after treatment showed marked improvement, with no evidence of marginal ulcerations. The combined treatment may be administered continuously for long periods without ill-effects. The corticotropic hormone facilitated the control or bridged the initial severe phase.

The term acute fulminating or toxic ulcerative colitis refers to the disease in a desperately ill patient and is an episode of marked severity and intensity, associated with high temperatures and significantly elevated pulse rates over a period of several days.[1] It is fortunately uncommon, representing about 5% of all cases of ulcerative colitis, but it carries with it an extremely high mortality, irrespective of whether medical or surgical treatment is instituted. Crile and Thomas[2] found that 36% of patients with this stage of the disease died during the first hospital admission, regardless of the type of therapy used. Furthermore, of the patients followed up after their hospital discharge, an additional 32% died, giving a total mortality of 68%.

A favorable response previously recorded to therapy with gold salts, phenylbutazone (Butazolidin), and vitamin B_{12} in ulcerative colitis with arthritis was a valid reason for a therapeutic trial in a patient with acute fulminating ulcerative colitis.[3]

Report of a Case

A 32-year-old woman was first seen in January, 1959. The patient related that after the termination of a pregnancy two years ago she had been suffering from recurrent attacks of colitis, characterized by profuse unrelenting diarrhea, rectal discharges of mucus, pus, and blood, together with crampy abdominal pain, tenesmus, chills, and fever. Stool examinations, proctoscopy, and x-ray studies at another hospital confirmed the diagnosis of ulcerative colitis. Treatment included a bland diet and administration of sedatives, antispasmodics, opiates, salicylazosulfapyridine (Azulfidine), antibiotics, and ACTH in doses of 60 to 100 units daily. After 31 days the patient was discharged from the hospital with some decrease in the symptoms. She was switched from therapy with corticotropin to that with corticosteroids but did not respond to hydrocortisone, prednisone, prednisolone, methylprednisolone, triamcinolone, or dexamethasone (Decadron). The blood count remained low. She was advised to seek psychotherapy. Ten days before admission she had a recurrence of diarrhea, cramping abdominal pain, temperatures to 102 F (38.9 C), and had lost 20 lb. (9.1 kg.). She also developed a persistent stomatitis and remained bedridden at home.

Physical examination on admission revealed the signs and symptoms of an acute fulminating ulcerative colitis. The eyeballs were sunken, the skin was dry, the pulse rate was 150 per minute, blood pressure 90/60 mm. Hg, and the temperature 104 F (40.0 C). She was dyspneic and extremely pale and appeared to be in shock. She was disoriented as to time and place. There was generalized abdominal tenderness. Stools numbered 10 to 14 per day. Laboratory studies revealed a hemoglobin concentration of 5.2 Gm.%, erythrocyte count 2,100,000 per cubic millimeter, white blood cell count 18,000 per cubic millimeter, hematocrit 24%, erythrocyte sedimentation rate 60 mm. per hour (Westergen) plasma albumin level 2 Gm.%, globulin level 3.1 Gm.%, blood chloride level 240 mg.%, blood urea nitrogen level 35 mg.%, and blood sugar level 120 mg.%. The feces were positive for occult blood. Bacteriological examinations of the stool did not show specific organisms and microscopic studies revealed only excessive mucus and pus.

Blood typing was promptly done and saline solution and blood were infused at a rapid rate. In spite of supportive therapy with corticosteroids, opiates, sedatives, blood transfusions, and antibiotics the patient's condition remained critical (fig. 1). Examination of the colon by means of a barium enema showed extensive ulcerative colitis (fig. 2). On the sixth day a slow intravenous drip of 20 units of ACTH in 500 cc. of isotonic sodium chloride solution was started. She also received 5 mg. of gold sodium thiosulfate intravenously and 50 mcg. of vitamin B_{12} subcutaneously. The next morning she was mentally clear. On the seventh day 20 units of ACTH was administered intramuscularly every 12 hours. Administration of phenylbutazone, 100 mg., was begun orally and continued as a daily dose. On the eighth and ninth days the ACTH dose was 10 units twice a day. This was further reduced to 10 units once a day on the 12th, 14th, 20th, and 27th

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days and then completely discontinued. The dosage of gold salts, in a 5-mg. dose with 50 mcg. of vitamin B_{12}, was maintained twice a week.

Within one week of treatment the number of bowel movements had decreased from nine to two daily. There was a dramatic improvement. The response was characterized by the disappearance of fever, toxemia, abdominal distention, and diarrhea. There was demonstrable healing of ulcerations in the mouth and in the colon, as noted in the proctoscopic examinations. The blood cell counts, sedimentation rate, and serum protein levels returned to normal, and the blood disappeared from the feces. The pulse rate dropped from 140 to 90 per minute. The total quantity of ACTH administered was relatively small (140 units), and the cessation of ACTH therapy caused no ill-effects.

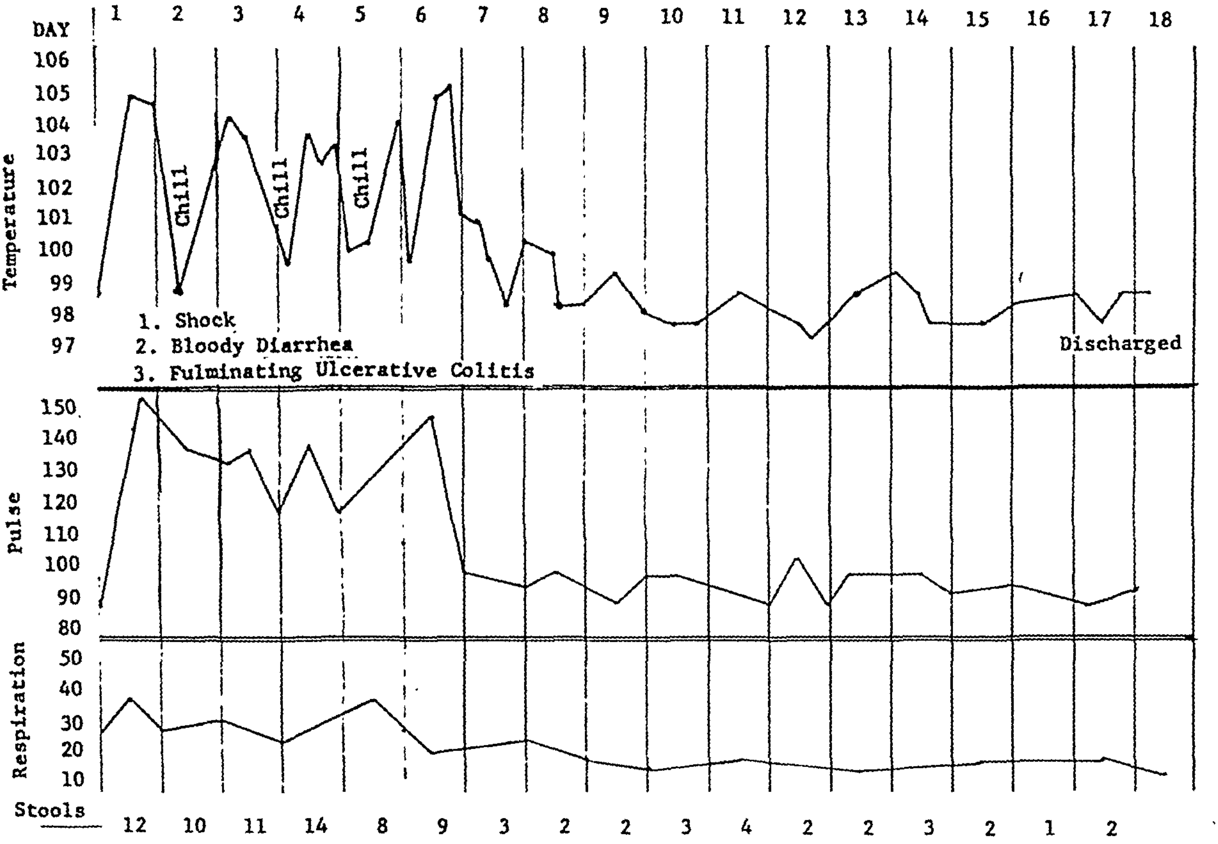

Fig. 1.—Chart of patient with toxemia, showing response to treatment.

During the next two months the patient remained asymptomatic, receiving a daily oral dose of 100 mg. of phenylbutazone and 5 mg. of gold sodium thiosulfate intravenously concomitant with vitamin B_{12}, 50 mcg. subcutaneously, twice a week. She was averaging three normal bowel movements a day.

At no time were there any dietary restrictions. She had a good appetite. Fat or fried foods, green vegetables, fresh fruits, nuts, fried potatoes, ice cream, tuna, ham, orange juice, cheese, steak, veal, or pizza pie did not induce diarrhea. Her menses became normal again.

The roentgenogram of the colon obtained three months after treatment showed a marked improvement with no evidence of marginal ulcerations (fig. 3). The frequency of gold injections was reduced to once a week, and the phenylbutazone dose was taken every other day. She had one to two normal bowel movements daily. At this time she stated that she felt well. She was completely rehabilitated and had gained 30 lb. (13.6 kg.).

Comment

Experience with this form of therapy is encouraging. In this case therapy with ACTH was used in a dosage sufficient to control the toxemia and the bleeding. The ACTH therapy was discontinued after a total dose of 140 units over 21 days, and this was considerably less than the amounts reported in the literature.

In an extensive review by Elliot and co-workers[4] of 33 patients with ulcerative colitis treated in hospital the dosage of ACTH was 100 to 120 units daily, gradually reduced to a daily maintenance dose of 20 to 40 units, and the total dosage amounted from 900 to 2,500 units. The late results of this therapy in six acutely ill patients with severe colonic damage were not striking, since an ileostomy had to be performed in three patients, ileostomy and colectomy in one, and chronic invalidism resulted from treatment in another.

In this case the corticotropic hormone facilitated the control or bridged the severe phase until the phenylbutazone and gold salts with vitamin B_{12} therapy corrected the disease process. From previous experience this usually requires from 4 to 12 weeks. There is little doubt that this therapy saved the colon and perhaps the life of this young woman.

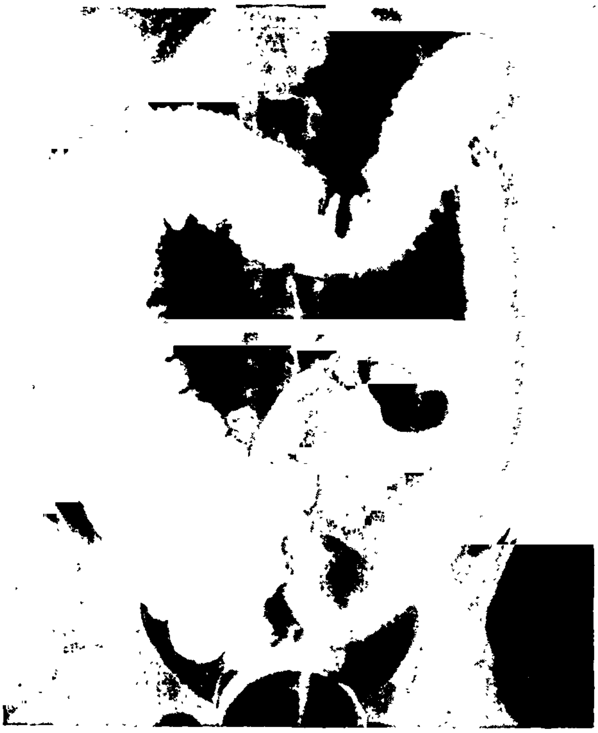

Fig. 2.—Roentgenogram taken on admission, showing extensive ulcerative colitis. Mucosal ulcerations are demonstrated throughout.

The association of ulcerative colitis with stomatitis, although not common, is of interest here. It usually denotes a severe ulcerative colitis.[5] This patient had a persistent stomatitis with ulcers on the tongue, alveolar margins, and mucosa. The ulcers were shallow and showed a yellow sloughy base. Some of the ulcers extended into the pharynx. The patient observed that the appearance of the stomatitis always preceded an episode of severe rectal bleeding. With therapy the ulcers healed and did not recur. She stated that this treatment seemed more helpful than any other form of therapy. The mechanism of the healing, as demonstrated in the stomatitis as well as in the colitis, remained nonspecific and may have been related to the sharp increase in protein values in the blood serum at this time.[6]

The treatment of ulcerative colitis is largely symptomatic and prolonged.[7] Patients with this disease are notoriously vulnerable, and recurrences are precipitated by physical fatigue, emotional tension, infection, operation, cathartics, antibiotics, menses, and pregnancy. In severe ulcerative colitis the response to medical management is frequently inconsistent or unsatisfactory and many patients become chronic invalids. Some authorities would place it among the collagen disorders.[8] Although it has been reported that arthritis is the most common complication of ulcerative colitis outside the intestinal tract, little has been written about it. The close relationship between the attacks of colitis and arthritis, and the improvement in the arthritis after colectomy, suggest an etiological relationship between articular and intestinal lesions.

From previous experience, it appears that therapy with phenylbutazone, gold salts, and vitamin B_{12} is more effective than the usual therapeutic measures. These may be administered continuously for long periods without ill-effects and under proper supervision appear to be useful adjuncts for the control of this disease. The response is gradual and usually requires 8 to 12 weeks. At no time need there be any dietary restrictions. Bowel habits become normal and the gain in weight varies from 10 to 30 lb. (4.5 to 13.6 kg.). ACTH therapy is not to be used except in toxic or fulminating ulcerative colitis and only for a short period.

There is evidence that this treatment is also beneficial in patients with regional ileitis (Crohn's disease).[3]

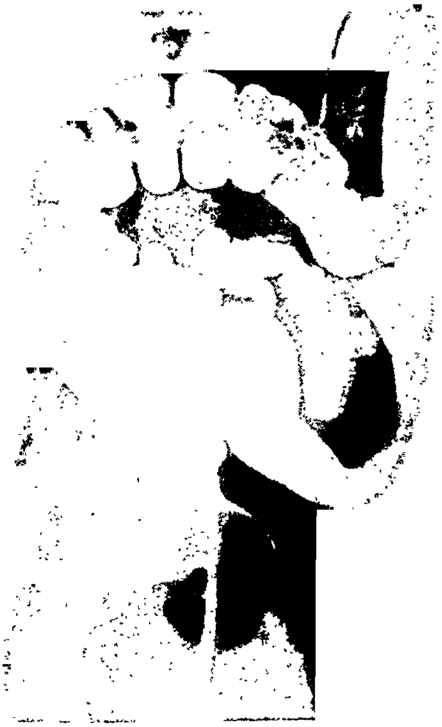

Fig. 3.—Roentgenogram taken three months after treatment with gold salts, phenylbutazone (Butazolidin), and vitamin B_{12}. The haustral markings have assumed normal configuration and there is no evidence of ulceration.

Summary and Conclusions

A patient with fulminating ulcerative colitis was treated with a short course of ACTH, gold salts, phenylbutazone (Butazolidin), and vitamin B_{12}.

There was a dramatic effect on the course of the disease. Roentgenographic as well as clinical evidence demonstrated the beneficial effects of this form of therapy. Similar experience has been recorded in several patients with ulcerative colitis and arthritis. There were no dietary restrictions. In the patient whose case is reported here the colitis was completely controlled, permitting her to return to a self-sufficient and useful life.

90-36 149th St. (35).

The phenylbutazone used in this study was supplied as Butazolidin by Geigy Pharmaceuticals, Division of Geigy Chemical Corporation, Ardsley, N. Y.

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EMERGENCY CARE OF EXTRADURAL HEMATOMA

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The patient with head injuries leading to extradural hematoma is most likely to pass through three stages: unconsciousness, a lucid interval, and recurrence of unconsciousness, with rapid deterioration. The relapse into unconsciousness denotes fulminating extradural hematoma and demands immediate action; the patient in this stage can no more tolerate delay than can a patient with respiratory obstruction. He cannot be transported long distances, and his hope lies in the general surgeon who first attends him. Usually, as in this case of a man injured in a motorcycle accident, the bleeding is from a branch of the middle meningeal artery. The operation here described provides an opening in the temporal bone to relieve intracranial presssure, allow blood to escape, and permit electrocoagulation of the bleeding point.

The extradural hematoma is generally felt to be the province of the neurosurgeon. It is not thought to be manageable in community hospitals even though it is often rapidly fatal when there is no emergency decompression of the cranial vault. It is therefore unrealistic to attempt to transfer such a patient to a neurosurgical center or to delay operation while a neurosurgeon is being summoned.

The mortality due to extradural hematoma is 50% in our hospital and in most clinics in the United States. This mortality has remained unchanged in spite of the striking improvement in mortality and morbidity of other craniocerebral injuries over the past three decades.[1] We believe that delay in treatment of extradural hematoma is responsible for the continuing high mortality. It would seem then that the responsibility for early recognition and palliative surgery in the smaller hospital must be placed on the general surgeon who is available.[2]

In this paper, we intend to reiterate the symptomatology and the emergency methods of attaining intracranial decompression prior to transportation for definite treatment to a neurosurgical facility.

Anatomy and Physiology

Extradural hematomas form between the dura and the skull. The bleeding source usually is a branch of the middle meningeal artery. This artery arises in the neck from the internal maxillary artery and enters the cranium through the foramen spinosum, grooving the inner surface of the temporal bone (fig. 1). The main branch lies about one fingerbreadth anterior and superior to the external auditory meatus. The artery usually has

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been torn by a linear fracture which passes through the temporal bone and the meningeal artery grooves. This fracture may or may not be demonstrated by roentgenograms. Its presence in this area certainly should alert the physician to the possibility of a middle meningeal artery tear in an otherwise normal patient. Temporal muscle edema overlying the fracture is an almost constant clinical finding and one which should always be sought.

The fracture, being the result of trauma, is most frequently associated with a brief period of unconsciousness which is not due to hemorrhage but to cerebral concussion. There is then a lucid period which represents the period of arterial bleeding and pressure build-up in the extradural space. Duration of the lucid interval depends, on the one hand, on the rate of recovery from the initial concussion and, on the other hand, on rapidity of development of cerebral compression from the accumulating extradural hematoma. If seen during the lucid interval, the patient will complain of severe headache on the side of the lesion. He also may be drowsy and nauseated and may vomit. The temporal muscle will be tense and swollen, but there may be no objective neurological signs. These signs are not long in coming, however, for a few minutes may present the physician with a dramatic picture of an unconscious patient with a dilated pupil fixed to light on the involved side and with contralateral hemiplegia progressing to decerebrate rigidity. This recurrence of unconsciousness is the terminal stage. Without immediate decompression, irreversible changes occur in the brain and death ensues.

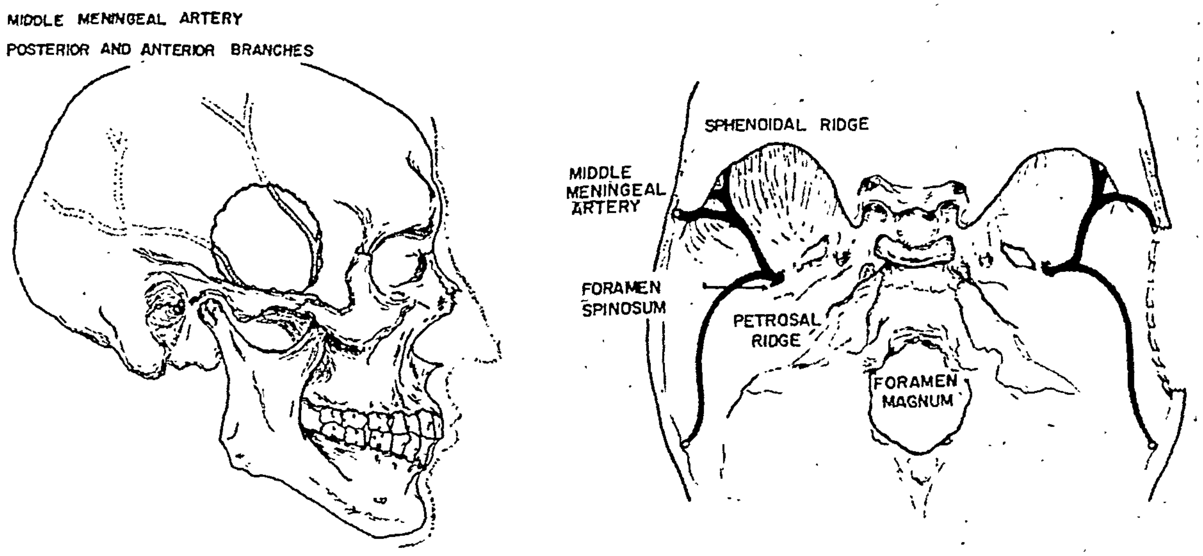

Fig. 1.—Diagram showing middle meningeal artery as usual source of bleeding in case of subdural hematoma.

How are the neurological signs produced? Pressure from the enlarging hematoma displaces the cerebral hemispheres and the midbrain. The uncus gyri on the medial surface of the temporal lobe is forced into the incisura of the tentorium cerebelli, compressing first the third cranial nerve and then the midbrain. This produces a paralysis of the opposite side of the body of the upper motor neuron type with hyperreflexia and an up-going toe sign. The third nerve paralysis is evidenced by an ipsilateral dilating pupil ultimately fixed to light and by possible paralysis of eye muscles. Further herniation of the uncus gyri against the midbrain compresses the vital centers, resulting in coma, decerebrate rigidity, stertorous breathing, and slowing of the pulse.[3] To recapitulate then, the classic history is divided into three stages: (1) unconsciousness due to concussion; (2) lucid period usually but not absolutely present; then symptoms of severe headache, drowsiness, nausea and vomiting, and the apprehension of impending disaster; and (3) recurrence of unconsciousness and rapid deterioration. This syndrome, when complete, will make its urgent nature apparent even to the casual observer.

Report of a Case

A 22-year-old man was admitted to our emergency room in coma. The history accompanying the patient was as follows: The patient had been rendered unconscious in a motorcycle accident but had begun to revive when first seen in an outlying hospital shortly thereafter. He tossed and groaned for about 40 minutes but did not respond to verbal stimuli. While he was being examined by the physician his right pupil became dilated and fixed to light and he became totally unresponsive. He was then transported to our hospital, arriving four hours after his injury, with a tentative diagnosis of extradural hematoma.

On examination, the patient was unresponsive to verbal stimuli and responded only slightly to pain with movement of the right upper and lower extremities. There was bleeding from the nose and both ears. The right temporalis muscle was swollen. The right pupil was 4 mm. in diameter and the left pupil 3 mm. in diameter, and both were fixed to light. There was hyperreflexia of the left upper and lower extremities but no response to plantar stimulation. Roentgenograms accompanying the patient showed linear fracture of the squamous portion of the right temporal bone. Immediately after admission, a tracheostomy was done. Suction of the trachea yielded large amounts of bright and dark blood. The patient was then taken to the operating room. A bur hole was made in the right temporal bone, and an extradural clot of dark and bright red blood was found. The bur hole was enlarged by rongeurs, and the massive clot, consisting of 500 cc. of blood, was evacuated. The anterior branch of the middle meningeal artery was still bleeding and was coagulated.

After operation the patient remained decerebrate. In spite of all supporative measures, his condition continued to deteriorate and he died 48 hours later. Postmortem studies showed a marked encephalomalacia of the cerebral hemisphere underlying the site of the extradural clot. There were extensive confluent midbrain hemorrhages.

Treatment

The emergency treatment of a patient with classic signs of fulminating extradural hematoma must be carried out with all possible haste, since the diagnosis is necessarily made in the terminal stage. No thought should be given to transporting this patient from a community hospital to a distant neurosurgical facility without first decompressing the extradural space. Establishment of an adequate airway is of prime importance and can be achieved by endotracheal intubation or tracheostomy. No attempt should be made to demonstrate a skull fracture by x-ray picture, as this requires too much time and often fails. Linear fractures of the temporal bone and basilar portion of the middle fossa are notably difficult to visualize, and patients with such fractures are often quite restless and uncooperative. If the patient is comatose, there is certainly no time for such refinements. Blood loss at surgery may be considerable, so type and crossmatch should be determined at the beginning of the procedure. Even local anesthesia may be unnecessary until decompression is accomplished, if the patient is deeply comatose. A headlight and suction are desirable but not essential.

Operative Procedure

After an appropriate area has been shaved, a 6-cm. vertical scalp incision is made and carried through to the bone. Its lower end is placed at the root of the zygoma one fingerbreadth anterior to the external auditory canal (fig. 2). Self-retaining retractors are used to hold the scalp and temporalis muscle edges apart. A bur hole may then be placed in the underlying temporal bone, or the bone may be opened with a gouge or chisel. Once the extradural space is opened, the hole can be enlarged with rongeurs in a radial fashion to a diameter of about 4 cm. If a clot is encountered, an attempt should be made to locate the bleeding point, which can be clamped, ligated, or electrocoagulated. If the bleeding point is deep in the middle fossa, the extradural space may be loosely packed, permitting some bleeding to the outside.[4] The scalp will bleed briskly when the self-retaining retractors are removed. They should be left in place unless Michel's clips are available for hemostasis. A loose dressing is applied over the wound, and the patient is readied for rapid transportation. It is imperative that a physician accompany the patient in an oxygen-equipped ambulance with blood or plasma on hand for use as indicated. This procedure, even in inexperienced hands, is a brief one and will offer the patient his only opportunity for recovery. Postoperative care of the patient, even assuming the surgery to have been definitive, should be directed by a neurosurgeon.

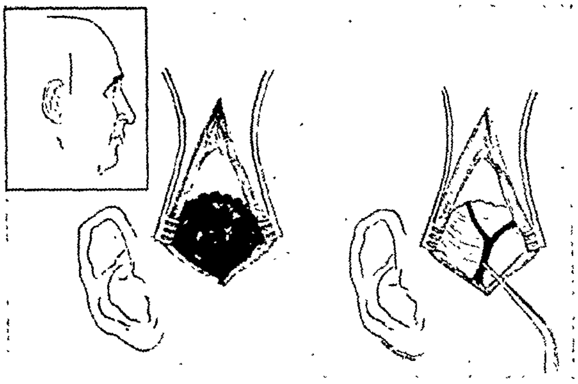

Fig. 2.—Sketch showing operative procedure in patient with subdural hematoma.

Comment

Standard surgical textbooks and manuals of general surgical and neurosurgical technique describe the treatment of extradural hematomas. They assume that it will be carried out by neurosurgically trained personnel. For the reasons presented above, this mode of treatment obviously is not applicable in outlying hospitals where neurosurgeons are not readily available. The patient with fulminating extradural hematoma can no more tolerate prolonged delay in treatment than can a patient with respiratory obstruction. While a few patients will present a similar picture from fulminating acute subdural hematoma, these patients have massive underlying brain concussion, and there is extremely high mortality with or without operation. Other patients with subdural or subcortical hematoma can be safely transported, since the deterioration of their conscious state will occur over hours or days.[5] We propose that a new attitude toward management of the extradural hematoma be invoked. The diagnosis and emergency treatment have been outlined.

Summary

The fulminating extradural hemorrhage classically has three stages—concussion, recovery, and then relapse of unconsciousness with ipsilateral dilated fixed pupil, contralateral hemiplegia, and terminally decerebrate rigidity. The fulminating extradural hematoma is often rapidly fatal. The patient should not be transported long distances prior to intracranial decompression. The responsibility for early treatment lies with the general surgeon who first attends the patient.

Treatment by intracranial decompression through an enlarged bur hole should be carried out with haste, since irreversible changes occur rapidly in the midbrain. After intracranial decompression, the patient should be placed in the care of a neurosurgeon and accompanied by the physician en route.

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TREATMENT OF HYPSARHYTHMIA WITH ACTH

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Hypsarhythmia is a type of epilepsy which has, in the past, had an extremely poor prognosis. Eleven per cent of the patients died before the third year of life, and 87% of those who lived were feeble-minded. The present series of 60 children were treated with corticotropin for one year, with marked improvement in 36 and almost complete relief in 5 as judged by electroencephalographic criteria and subjective symptoms. The mode of action of the drug was not explained, and its effectiveness in the individual case could not be predicted from a knowledge of the etiology. By contrast with the poor results obtained in the past, these recent results with corticotropin are encouraging.

In 1957 at the International Congress of Neurological Sciences in Brussels, Sorel and Dusaucy-Bauloye[1] presented an exhibit showing that ACTH is highly effective for the treatment of hypsarhythmia and infantile spasms. In March, 1958, Sorel came to Chicago to attend a conference organized by the Brain Research Foundation to discuss this treatment and its implications.[2] A full-length report by Sorel and Dusaucy-Bauloye has been published recently.[3]

After seeing Sorel's exhibit in Brussels, we began, in October, 1957, to treat patients with hypsarhythmia with ACTH. The present article is a report on the first 60 consecutive cases of hypsarhythmia in which this treatment was used. Low[4] has reported a similar study with comparable results. Infantile spasms with hypsarhythmia is a distinct entity.[5] The characteristic electroencephalographic findings are random slow waves and spike discharges of very high voltage[5b]; these are present in both waking and sleeping states (fig. 1, 2, and 3). The spike discharges vary from moment to moment in both duration and location. At times they appear to come from a single focus, and a few seconds later they seem to originate from multiple foci. Occasionally the spike activity becomes generalized, but a highly organized pattern like that of either petit mal variant or true petit mal does not occur.

The pattern of hypsarhythmia usually develops between the 3rd and the 12th month of life. However, some of our patients were 1 day old, and one child developed spasms with hypsarhythmia at the age of 3 years. When the illness starts in the first few months of life severe mental and physical retardation usually results. Many of these children were unable to hold up their heads at 6 months of age, and many were unable to stand at the age

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of 2 years. Several of the 6-year-old children could speak only indistinct single words. When hypsarhythmia develops after 12 months of age there may be a very rapid deterioration of the child's intellectual and motor status.

The spasms, which are the most usual clinical manifestations, are characterized by sudden jerking or flexion of the body; often the eyes roll up, and there is an outward flinging of the arms and quivering of the entire body. The attacks are short, but not so short as myoclonic seizures. Some of the infants have tonic-clonic convulsions that are classifiable as grand mal. The spasms are most likely to occur as the child awakens, and they tend to repeat, forming an interrupted series. Sometimes they are so numerous that several thousand spasms occur in a day.

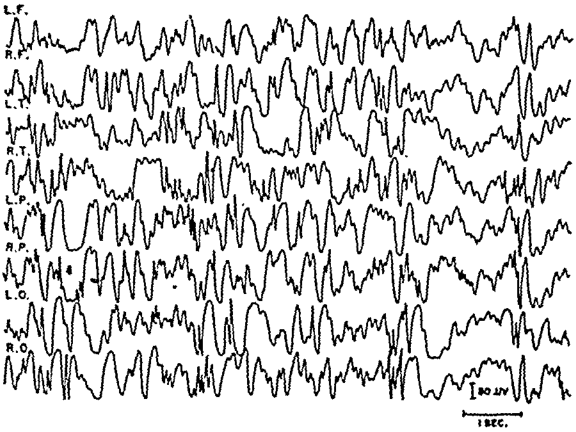

Fig. 1.—Electroencephalogram showing severe hypsarhythmia (waking and sleeping states indistinguishable), recorded on 7½-month-old infant with frequent brief spasms of turning the head, upward rolling of the eyes, and twitching of the arms, lasting for a few seconds. Onset at age of 3 months; retarded motor development; child does not sit up and is unresponsive; etiology unknown. Time calibration shows one second. Voltage calibration indicates the deflection for 50 µv.

The prognosis for a child with infantile spasms was extremely poor before the introduction of treatment with ACTH.[6] Eleven per cent of the patients died before the third year of life, and 87% of those that lived were feeble-minded. Although the seizures tend to subside by the fourth year of life even without treatment, retardation is permanent.

Materials and Method

An electroencephalogram was obtained on each child suspected of having hypsarhythmia, and the diagnosis was established before treatment with ACTH was begun. All recordings were made with the patient in both waking and sleeping states. The recordings were monopolar; interconnected ear lobes were used as a common reference, but this is unimportant because hypsarhythmia is a disorder that can be seen as easily in bipolar as in monopolar recordings.

As soon as the electroencephalographic diagnosis was established treatment with ACTH was begun. Infants were given (intramuscularly) 5 units of corticotropin gel (Purified Corticotropin-Gel Wilson) daily for five days. This was increased to 10 units after 5 days and 15 units after 10 days. On the 15th day the electroencephalogram was repeated. If there was clinical or electroencephalographic evidence of improvement the dosage of 15 units per day was maintained. If not, the dosage was increased gradually up to a maximum of 50 units per day. In one case the electroencephalogram normalized with the patient in both waking and sleeping states after 20 injections; the infantile spasms stopped completely and there was marked mental and physical improvement during the ensuing month. In a few cases, in order to obtain maximum benefit it was necessary to give as many as 120 daily injections.

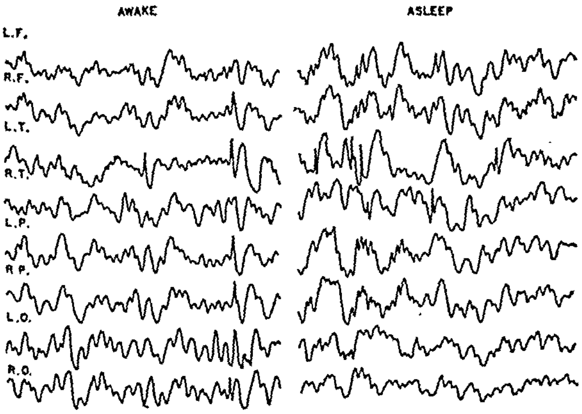

Fig. 2.—Electroencephalogram of same child as in figure 1 after 18 daily injections of 16 units of ACTH gel. Brief seizures are reduced in number and electroencephalogram is improved.

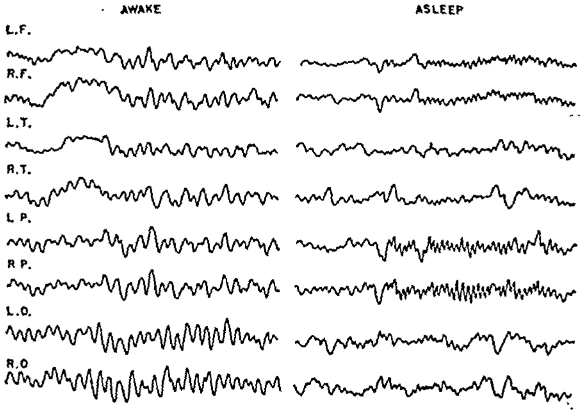

Fig. 3.—Electroencephalogram of same patient 30 days later after total of 54 daily injections of 16 units of ACTH gel. Normal electroencephalogram; no seizures have occurred for 20 days; child is able to sit up by himself and get up on his knees; he is responsive, alert, and apparently of normal intelligence.

Results

The table shows the number of patients whose electroencephalograms normalized and who became seizure-free. The number whose general clinical condition improved and the number unimproved are also shown. From these figures it will be seen that when the spike discharges disappear from the electroencephalogram the prognosis is good. In the five patients with complete normalization in both waking and sleeping states, all became seizure-free; three became completely normal clinically, two improved, none remained unimproved, and none showed relapse.

Among the 31 patients with marked electroencephalographic improvement, 42% were seizure-free, 40% were greatly improved, and only 18% were unimproved as far as seizures were concerned. The general improvement in motor performance and intellectual activity was similar to the improvement in the seizures; 10% became clinically normal and 50% were greatly improved. However, 30% showed relapse.

Further confirmation of the prognostic value of the electroencephalogram appears when one considers the 24 patients who were unimproved electroencephalographically; none were seizure-free and 96% were unimproved as far as seizures were concerned. None became clinically normal, and 96% were clinically unimproved.

Relationship Between Electroencephalographic and Clinical Response to ACTH Treatment

	No. of Cases	EEG After Treatment	Seizures						Motor Performance and Alertness							
			Eliminated		Decreased		Unchanged		Normal		Improved		Unimproved		Relapsed	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
	5	Normal	5	100	0	0	0	0	3	60	2	40	0	0	0	0
	31	Improved	13	42	12	40	6	18	3	10	15	50	13	40	9	30
	24	Unimproved	0	0	1	4	23	96	0	0	1	4	23	96	1	4
Total	60		18	30	13	22	29	48	6	10	18	30	36	60	10	17

We have tried to analyze the etiology to determine the most usual cause of hypsarhythmia and to see if we could establish any relationship between etiology and response to ACTH. Each of the common infectious diseases of childhood was implicated in a few cases, but none seemed to be particularly likely to produce hypsarhythmia. In 28 of our 60 cases there was no history of illness just before the onset of spasms and the symptoms appeared suddenly without apparent cause. In 10 cases hypsarhythmia developed after encephalitis. Various diseases were involved: chickenpox, measles, virus pneumonia, and German measles. In one case triple vaccine injections were held responsible, but the association may have been coincidental. There were single cases in which the disorder was secondary to meningitis, otitis, and Mongolism respectively. Among the five cases in which ACTH normalized the electroencephalogram, made the patient seizure-free, and produced a general clinical improvement, no relationship could be found between the etiology and the therapeutic response. In this maximally responsive group each of the following etiologies was responsible for one case: German measles, roseola, upper respiratory infection, and cerebral palsy; in one case there was no assignable cause. When hypsarhythmia occurs in a patient with cerebral palsy it is usually difficult to decide whether the hypsarhythmia is the result of a developmental defect, anoxia at birth, or trauma. The situation is further complicated by the fact that babies with hypsarhythmia often become spastic after a number of years. The conclusion is not justified that spasticity indicates that the cerebral palsy is the cause of the hypsarhythmia.

In the conference organized by the Brain Research Foundation,[2] the question arose as to whether chlorpromazine might increase the effectiveness of ACTH therapy. Sorel had used chlorpromazine in the patients he treated with ACTH, and the incidence of great clinical improvement and normalization of the electroencephalogram in his series of cases was somewhat higher than in ours in which no chlorpromazine was used. We placed seven patients who did not respond to ACTH alone on therapy with chlorpromazine and ACTH. One patient became completely normal, three improved, and three patients remained unimproved. The question arose as to whether anticonvulsants might increase the therapeutic effect of ACTH. One patient who returned to normal was not receiving anticonvulsants. All others were on therapy with various combinations of diphenylhydantoin (Dilantin) sodium, phenobarbital, trimethadione (Tridione), primidone (Mysoline), and methsuximide (Celontin). A relationship between tranquilizers and anticonvulsants and the therapeutic effect of ACTH has not been established. The mode of action of ACTH in causing improvement in some cases of hypsarhythmia is not understood. It is also not clear why some patients fail to respond to this form of therapy. At the present time one cannot predict in which case of hypsarhythmia the patient will respond to ACTH.

About 15 of the total series of 60 patients were hospitalized, and their electrolyte balance and steroid levels were studied. These investigations will be reported in a subsequent paper.

Summary and Conclusions

Before the introduction by Sorel of ACTH for the treatment of hypsarhythmia, the prognosis for patients with this condition was extremely poor; 85% became mentally retarded and 10% died. Electroencephalographic and clinical studies on 60 consecutive patients with infantile spasms with hypsarhythmia, some of whom have been followed up for over a year, indicate that ACTH therapy results in a dramatic improvement in at least 30% of such cases. When a good response to ACTH is obtained, the electroencephalogram normalizes, a great clinical improvement occurs, the spasms cease, and further retardation is prevented.

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The corticotropin gel used for this investigation was supplied as Purified Corticotropin-Gel Wilson by Wilson Laboratories, Chicago.

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GASTRIC PERFORATION IN THE NEWBORN INFANT

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Perforation of the stomach wall in the newborn infant was first described by Siebold in 1825, and 81 cases have since been reported. Mortality is 81 %. Peptic ulceration was initially considered the cause of perforation, but congenital defects of the stomach wall and other etiological factors have now been defined. The first attempt to close such a perforation was in 1929, but survival after operation was not recorded until 1950. There should be little difficulty in making an early diagnosis and instituting proper treatment, if the possibility is kept in mind. Prompt identification and adequate supportive management during the preoperative and postoperative periods should decrease mortality.

Until recent years little had been written about perforation of the stomach in the newborn infant. This is not surprising, in view of the paucity of known cases. Vargas and others[1] have credited Siebold with publishing the first report of this entity in 1825. During the next century fewer than 10 cases were reported. However, within the past two decades more cases have been recognized and reported, bringing the total to 81. The over-all mortality in the cases reported is 81.5%.

Etiology

The cause of perforation in the initial cases was ascribed to peptic ulceration. In 1943 Herbut[2] shed new light on the subject when he found the perforation in a newborn infant to have resulted from a localized congenital defect in the musculature of the stomach. This finding has been confirmed by other observers.[3] Overwhelming septicemia with ulceration and necrosis of the stomach,[1] gastric ulceration resulting from intracranial hemorrhage sustained at birth,[4] stress and anoxia with resultant gastromalacia,[5] ruptured diverticulum,[6] distal obstruction,[7] intubation from tracheal suction or gavage feeding,[1] and abdominal trauma during delivery[8] have been cited as etiological factors. Cases have been reported in which no cause for the perforation could be found.[9]

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Diagnosis

If one is aware of this condition, there should be little difficulty in making an early diagnosis and instituting proper treatment. In reviewing the clinical studies of cases reported, there is a striking resemblance in their histories. Although prematurity and congenital anomalies have been listed as associated findings,[10] the infant is usually normal at birth. Oral feedings are at first tolerated; however, regurgitation may be present. Stools are normal but may contain blood if an acute ulcer is present. After doing well for from one to several days after birth the infant has a fairly sudden onset of lassitude, dyspnea, and abdominal distention. This is followed by paralytic ileus, dehydration, and shock. The temperature and blood count are not remarkable. Nasogastric suction fails to relieve the distention, and fluids used for irrigation may not return. This should suggest that perforation has occurred.[1]

The diagnosis may be confirmed by a plain upright roentgenogram of the abdomen, which will show the presence of free peritoneal air. The superiority of the upright over the horizontal position for roentgenography is emphasized by Pendergrass and Booth.[11] The horizontal film may not show the pneumoperitoneum, therefore an upright film should always be made.

Treatment

In addition to supportive therapy with intravenously administered fluids and blood, vitamins, nasogastric suction, and antibiotics, surgical closure of the perforation must be done if these infants are to survive. Because of poor development of the omentum and the large size of the perforation which is usually present, walling off of the area does not readily occur spontaneously,[1] making surgical intervention mandatory.

The first attempt to repair a perforation of the stomach in a newborn infant was recorded by Stern and associates [12] in 1929. The first survival after surgery was reported by Legar and co-workers [13] in 1950. During recent years other reports of successful closures have been published [14]; to date 15 survivals have been reported.

Various incisions have been used to approach the stomach or upper part of the abdomen in the infant. We prefer a right transverse incision, which may be extended across the abdomen if further exposure is needed. On exposure of the site of perforation the edges may be seen to be necrotic and ragged. These shreds of tissue should be excised for microscopic study and to insure healthy tissue for closure. Griffin and Griffin [3b] stated that at surgery one cannot differentiate clinically between a perforated ulcer and a congenital muscular defect, since in the newborn infant the perforation is through a normal or slightly thinned wall, and the typical perforated ulcer as it appears in adults is not present.

Many perforations occur near the cardia, and this area should be carefully searched. After closure of the obvious perforation the stomach should be filled with warm sterile saline solution to check the repair and to detect other perforations, as suggested by Vargas and co-workers.[1] Obstruction of the intestinal tract must also be excluded before closing the abdomen, since this has been an associated finding in a significant number of cases.[14]

I prefer a two-layer closure of the perforation. Drainage of the peritoneal cavity is optional, but it is unnecessary unless there is a localized abscess. The nasogastric tube may be removed within 48 hours postoperatively and the infant started on small amounts of graduated feedings.

Report of Cases

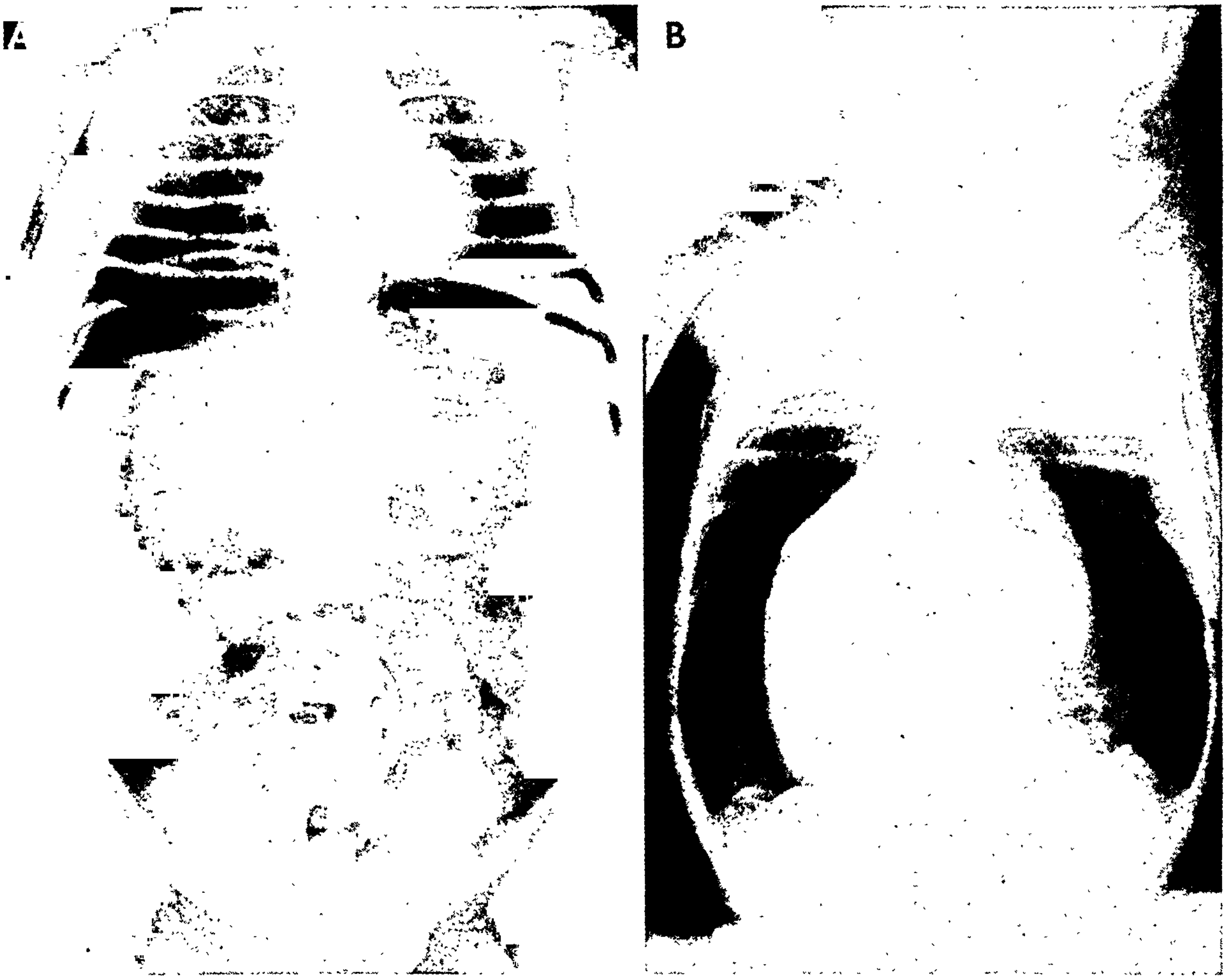
Case 1.—On June 12, 1939, a 3-lb. (1,361-Gm.) female baby was delivered spontaneously after six hours of labor. The condition of mother and baby was reported to have been good at birth. The infant was placed in an incubator and a formula was ordered. Neither tracheal suction nor gavage feeding was recorded as having been performed.

The infant died 41 hours after birth. Edema of the abdomen and signs of intra-abdominal fluid were described prior to death, but the time of these findings was not stated. At autopsy the abdomen contained a large amount of gas and fluid. Two circular perforations were found on the anterior superior aspect of the stomach, one of which measured 9 mm. and the other 3 mm. in diameter. The microscopic examination showed the region of the edges of the gastric perforations to be densely infiltrated with inflammatory cells, with normal muscle in the adjacent gastric wall. The pathologist registered no opinion as to the cause of these perforations.

Case 2.—On Aug. 16, 1950, a 7-lb. (3,175-Gm.) female baby was delivered precipitously. The cry was instant and vigorous. Examination at birth revealed abdominal distention and dulness to percussion. A nasogastric tube was inserted with little yield. A tentative diagnosis of a large intra-abdominal cyst was made. At 16 hours of life no meconium had passed and roentgenograms of the abdomen were made. These revealed free air beneath the diaphragm and an increased density in the lower part of the abdomen. Laparotomy was performed 23 hours after delivery. At surgery a large distended bladder, measuring approximately 15 by 8 by 7 cm., was found filling the peritoneal cavity. A linear perforation, measuring 4 cm. in length, was observed in the cardia of the stomach, and a volvulus from incomplete rotation of the intestine was present. The gastric perforation was closed, the volvulus reduced, and a suprapubic cystostomy carried out. In spite of adequate supportive therapy with parenteral feedings and antibiotics the infant died seven days after surgery.

Autopsy findings revealed peritonitis, a 2-mm. perforation on the anterior surface of the first portion of the duodenum, and incomplete rotation of the intestinal tract, with partial obstruction of the duodenum from a congenital band. Dilatation of the bladder and marked hydronephrosis were also present, without evidence of obstruction to the lower urinary tract.

The attending surgeon felt certain that the duodenal perforation resulted from the trauma of a plastic nasogastric tube, although the pathologist did not register this opinion in the autopsy protocol.



A, roentgenogram of abdomen of infant in case 3 taken in horizontal position; *B*, roentgenogram of abdomen taken in upright position.

Case 3.—On Dec. 6, 1957, a 4-lb. 14-oz. (2,211-Gm.) female baby was delivered by an elective low-forceps procedure after eight hours of labor. The cry was vigorous at birth and no resuscitative measures were taken. Since the infant was considered to be premature, she was placed on therapy with penicillin, streptomycin, and vitamin K. Formula feedings were begun at 24 hours. Several feedings were taken without incident. On the 3rd day of life three stools were passed which were described as containing a small amount of blood. Vomiting occurred twice on this day.

The infant developed marked abdominal distention, which did not respond to nasogastric suction, 76 hours after birth. Temperature and white blood cell count were normal. The abdomen became silent, and eight hours later roentgenograms of the abdomen taken in both flat and upright positions revealed a massive pneumoperitoneum (see figure).

Ten hours after the onset of distention laparotomy was carried out. On opening the abdomen a large amount of free air escaped, and a thick, milky exudate was seen extending from the stomach across the transverse colon to the right gutter. This was removed by suction, and a linear perforation, about 2 cm. in length, with ragged edges, was readily seen, extending transversely across the anterior wall of the distal end of the stomach. The edges were trimmed away and closure effected. The abdomen was closed without drainage.

Microscopic study of the edges of the perforation revealed only acute inflammation. Insufficient tissue was obtained to study the musculature of the stomach wall.

Postoperatively the infant did well, except for slow weight gain. She was dismissed from the hospital 28 days after birth. When last seen, at 4 months of age, she weighed 11 lb. (4,990 Gm.) and appeared to be a normal, healthy baby.

Comment

These case reports tend to emphasize the various aspects of the problems outlined in the general discussion. In case 1, multiple perforations and prematurity were present. Case 2 illustrates associated congenital anomalies, especially obstruction distal to the site of perforation, and the possibility of postoperative perforation from a nasogastric tube. Case 3 more readily parallels the clinical picture described in the majority of reports reviewed in the literature. While no definite cause for the perforation was found, it is easy to speculate that, had adequate tissue been removed at the site of perforation, a congenital defect in the musculature of the gastric wall might have been demonstrated.

Summary

Two of three newborn infants with gastric perforation died. The diagnosis was unrecognized in one patient until autopsy. One patient died after surgery, from duodenal perforation thought to be caused by prolonged intragastric intubation and unrelieved associated duodenal obstruction. One patient survived and is developing normally.

Awareness of this condition, early diagnosis, and prompt surgical treatment will reduce the high mortality associated with gastric perforation in newborn infants.

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THE LEPROSY BACILLUS AND ITS HOST CELL.—*Mycobacterium leprae* can be introduced into human cells in culture where the bacilli persist for 1 and 2 months without demonstrable increase in the number of bacteria or appreciable host cell degeneration. While failure to elicit multiplication of the leprosy bacillus in cultured host cells means that a technique for providing large numbers of human leprosy bacteria for use in serologic and immunologic procedures is not yet provided by application of cell culture techniques, it is possible that the system as employed in the current work will provide a test method useful in screening drugs for antileprosy activity. The observation that the cytoplasm of a rare host cell in an infected culture is filled with a hundred or more acid-fast bacilli 2 and 3 weeks after exposure to a suspension of leprosy nodule is worthy of special attention.—J. A. Morris and K. Nakamura, Behavior of Human Leprosy Bacilli in Cultures of Human Cells, *The Journal of Infectious Diseases,* July-August, 1959.

CLINICAL NOTES

HYPERSENSITIVITY TO IMMUNE SERUM GLOBULIN

REPORT OF A CASE

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The following case report, I believe, represents the first reported case of spontaneous hypersensitivity to immune serum globulin (human).

A 15-week-old male infant was brought to my office on Oct. 10, 1958. He had been exposed to an uncle living in the same house who was ill with infectious hepatitis. Because of this, the infant was given 0.6 cc. of immune serum globulin (human) which had been obtained from the Maryland State Health Department. The injection was made into the upper outer quadrant of the left buttock; a 2-cc. syringe and a 20-gauge needle which had been water-sterilized were used. The plunger was pulled back to assure that the needle was not in a vein and no blood was received.

Within 60 seconds after injection the baby became limp, was flushed all over, suddenly turned cyanotic, and stopped breathing. Within 15 seconds the baby was given an injection of 1 cc. of epinephrine in the same area of the buttock. He cried out and began to breathe and his color improved, but he continued to be limp. Two minutes later 2-cc. of diphenhydramine (Benadryl) hydrochloride was administered intramuscularly in the opposite buttock. He was wheezing and frothing at the mouth and was alternately flushed and cyanotic in the extremities, lips, and face. Five minutes after the first injection, because he continued to remain in a state of collapse, another 1 cc. of epinephrine was injected in the same area of the buttock and 10 mg. of prednisolone (Sterane) with ¾ grain (50 mg.) of secobarbital (Seconal) was given rectally. The area of the buttock in which the gamma globulin was injected became alternately flushed and pale. In about one hour his condition had improved so he could be transferred to the hospital. Just before he was transferred he began retching and vomiting and again became limp. He was taken to the Easton Memorial Hospital and put in an oxygen tent. His color improved, but he was still limp. His temperature was 99 F (37.2 C), pulse rate 170 per minute, and respiration rate 36. The eyes, ears, nose, and throat were essentially normal; the neck was supple; the lungs were clear; the heart was normal and no murmurs were heard. There was a deep firm indurated area 2 in. (5.1 cm.) in diameter in the upper outer quadrant of the left buttock, which remained during the infant's stay in the hospital, but has since disappeared. His reflexes were very active.

Blood count revealed a hemoglobin level of 11.8 Gm. per 100 cc. and leukocyte count of 13,250 per cubic millimeter with 1% juvenile neutrophils, 15% stab forms, 31% segmented forms, 45% lymphocytes, and 8% monocytes. The urine did not show pathogenic findings.

Three hours after admission, because of repeated attacks of cyanosis, another 0.5 cc. of epinephrine was injected intramuscularly and ¾ grain (50 mg.) of secobarbital was administered per rectum. He was also started on prednisolone therapy, with 5 mg. every eight hours. His condition remained good during the night; in the morning the prednisolone therapy was reduced to 2.5 mg. every eight hours and the administration of oxygen was discontinued. He took fluids well, and on Oct. 12, 1958, he was discharged from the hospital on a regimen of prednisolone therapy, 2.5 mg. four times a day for two days, then 2.5 mg. daily for one week. Seven days after his reaction to immune serum globulin he developed a mild upper respiratory infection, but had no further reaction in the nature of a delayed serum sickness.

The mother was 31 years of age and well. Her pregnancy had been normal. At three months she had an injection of poliomyelitis vaccine and at four and one-half months of pregnancy a wisdom tooth was extracted under local anesthesia. Two injections of penicillin were administered at that time.

The infant was born in Easton Memorial Hospital on June 30, 1958. Delivery was normal. He was examined in the hospital, and at 1, 2, and 3 months of age he was examined in the office. His growth and development had been normal. At birth he weighed 8 lb. 5 oz. (3,770.5 Gm.) and at 3 months of age, 16 lb. 2 oz. (7,314.2 Gm.). He was on a regimen of evaporated milk formula with a carbohydrate supplement (Dextri-maltose) until 3 months of age, when he was started on whole cow's milk. He ate baby foods and took 0.6 cc. of vitamin supplement (Tri-vi-sol) daily. At 7 months of age he was well, weighed 21 lb. 7 oz. (9.8 kg.); was 28 in. (71.1 cm.) tall, and had had no other injections.

Family history revealed that the mother has had many allergies all her life. At present she is allergic to chocolate, cola, most nose drops, sulfonamides, and atropine. As an infant she had a severe reaction after each of her diphtheria injections. The father was 37 years old and well. Since the age of 6 months he has had eczema and continued to have it until three years ago. He received a medical discharge from the Army because of his allergy. In June, 1957, the father was given an injection of 17 cc. of gamma globulin prophylactically for mumps (epidemic parotitis). He developed a mild case of mumps.

The gamma globulin received by the patient in the case report was checked by E. R. Squibb & Sons. The lot in question, no. 277, had been prepared from human blood plasma and was normal in all respects. About 26,000 vials were shipped to 25 different locations in all parts of the United States, with no other reported reactions.[1] The gamma globulin remaining in the vial (1 cc.) was tested by intravenous injection into a rabbit and found to be sterile and nonpyrogenic.[2]

Dr. Charles A. Janeway, chairman, Commission on Plasma Fractionation and Related Processes, made the following comments on this case in a letter to Dr. Sam T. Gibson, director, Blood Program of the American National Red Cross, Washington, D. C.

> I think the outstanding features of this case are the tremendously severe allergic history in both parents of this child, which suggests that this child is the type of individual who reacts to antigens in an extraordinarily serious way. These are the people, certainly, who used to die following skin tests to detect sensitivity to horse serum, and are much more exquisitely sensitive than the individuals who have acquired a sensitivity as a result of previous exposure. The history of the use of therapeutic and prophylactic animal sera is replete with documented cases very like this one, and I would say that the physician was not only alert but very lucky to have saved this child's life. This is certainly the kind of baby I would be very hesitant about giving any type of injection to.
>
> It is interesting to speculate, first, as to whether this was an allergic reaction. I believe it was, but primarily on the basis of (1) the immediacy of the symptoms and (2) the heavy allergic history in the parents. It might also have been a vasomotor reaction due to intravenous injection of the type we saw in acutely ill children given intravenous gamma globulin, and the symptoms would be almost impossible to distinguish one from the other. I doubt if the dose was quite large enough to be responsible for this second type of reaction, particularly where the precaution of drawing back on the plunger was taken, so that only a small fraction of the dose could have been injected intravenously. Second, if this was an allergic reaction, then the mechanism is of some interest. The baby was only fifteen weeks old at the time of the injection. This might mean that this baby still possessed atopic reagins from its mother and that certain of the donors contributing to the gamma globulin solution might have eaten foods to which the mother had reagins. It is also possible that the mother is sensitive to such things as mercury, which might be present in the gamma globulin solution as a preservative. It seems fairly clear that the gamma globulin was acting as the shock antigen and that the hypersensitivity was in the child. This was not the passive transfer of reagins to a child with circulating antigen or the reaction would probably only have been local and milder, not general.

The only other report of a severe reaction to gamma globulin is that of Owings,[3] who on June 18, 1953, gave a 9-year-old female an intradermal skin test dose of 0.1 cc. of 1:100 gamma globulin; within one minute she became pale and went into anaphylactic shock. She was given diphenhydramine hydrochloride and epinephrine and recovered. She had had a previous gamma globulin injection in 1945. There are no other reported cases of sensitivity to gamma globulin, although more than 20,000,000 cc. have been distributed by the Red Cross and probably another 20,000,000 cc. by other agencies.

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PSYCHIATRY IN THE PHYSICIAN'S OFFICE.—All physicians are constantly practicing psychiatry; . . . [it] originated with them. Doctors . . . must be many-sided, being neither totally organically nor psychiatrically oriented. They must recognize that all patients need emotional assistance and then administer psychiatric first aid. The physician needs to . . . ask himself, "Why is this patient this way?"; to be slow to give a purely organic answer (such as menopause), and to be even slower to use the much overadvertised psychiatric drugs. Every doctor should have at his fingertips: the psychiatrically-oriented history; the basic psychodynamics of human motivation; the clinical picture of most common emotional disturbances and psychotic reactions; skill in using the simple fundamentals of psychotherapy; [and] the fundamental technics of reeducation. . . . No purely psychiatric care can replace the understanding and knowledge of the family doctor. This is the background of good medicine.—W. B. Terhune, M.D., F.A.C.P., The Office Management of Psychiatric Problems: Psychiatry in the Physician's Office, *Medical Annals of the District of Columbia*, June, 1959.

COUNCIL ON DRUGS

Report to the Council

The Council has authorized publication of the following report. A review of the current status of knowledge of this important subject is offered as a guide to individualization rather than standardization in the application of specific immunological procedures to the management of tetanus-prone injuries. H. D. Kautz, M.D., *Secretary.*

SPECIFIC PROPHYLAXIS OF TETANUS

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Although the incidence of tetanus in the United States has been decreasing during the past decade, several hundred cases still occur annually, in all walks of life and in all parts of the country.[1] The current situation has recently been well reviewed by Axnick and Alexander [1] who point out that, aside from the familiar hazard of tetanus after injuries and burns, there is still an unduly high incidence of the disease in relation to other circumstances, notably tetanus neonatorum.

Several publications on the management and prevention of tetanus have appeared within the past few years,[2] including an exhaustive review by Scheibel.[3] However, current literature and journal correspondence indicate that numerous areas of uncertainty persist regarding the prevention of tetanus. This status report attempts to assemble the existing basic knowledge on the subject, insofar as possible, and thereby to construct a rational set of procedures for the prophylaxis of tetanus. Necessarily, such a report on this complicated subject will be lengthy. For the convenience of the reader, the contents are summarized as follows.

- Active and Passive Immunization
- Use and Effectiveness of Tetanus Toxoid in Routine Immunization
  - Reagents and Procedures
  - Indications for Active Immunization Against Tetanus
  - Effectiveness of Tetanus Toxoid
  - Immunological Response to Tetanus Toxoid
  - Interval Between Basic Injections
  - Response in Young Infants
  - Competition of Antigens
  - Duration of Effect of Primary Immunization
  - Maintenance of Tetanus Immunity—Routine Booster Dose
  - Frequency of Administration of Booster Dose
  - Reactions to Tetanus Toxoid
  - Response to Booster Dose
  - Rate of Response to Booster Inoculation
- Management of Patients with Tetanus-prone Injuries
  - Handling of Immunized Patient
  - Interval Between Emergency Booster Doses
  - Effectiveness of Combined Active-Passive Immunization in Previously Immunized Persons
  - Tetanus Prophylaxis in Unimmunized Patients
  - Active-Passive Immunization in the Unimmunized Subject
- Summary
  - Active and Passive Immunization
  - Use and Effectiveness of Tetanus Toxoid in Routine Immunization
  - Management of Patients with Tetanus-prone Injuries

Active and Passive Immunization

Prophylaxis against tetanus may be achieved by either active or passive immunization or, under certain specified circumstances, by a combination of both. The differences between these two ways of achieving protection deserve to be reemphasized. Passive immunization is ordinarily induced by the subcutaneous or intramuscular injection of purified antitoxic horse serum. The protection achieved is rapid but transient. Detectable antitoxin appears in the circulation usually within a matter of minutes, reaches a peak after 2 to 3 days, and generally disappears in 10 days or longer, depending on the dose administered and the rate of elimination or inactivation of the immune horse globulin, which is related to the reactivity of the patient to horse serum.

Active immunization is a state achieved by injection of tetanus toxoid which acts as an antigen, stimulating the recipient to form his own antibodies. These, being autologous, are retained for a longer interval. Moreover, the production of new antibodies continues for a long period, and in addition such a process can be rapidly reactivated and greatly augmented by subsequent injections of toxoid. However, the initial development of significant antibody levels takes several weeks, so that immediate protection cannot be achieved by beginning active immunization.

Thus, passive immunization has the one advantage—sometimes a compelling one—of rapid effectiveness, but it has many disadvantages. The recipient of horse antitoxin not only makes no contribution to his own protection but actually reacts against it, by forming antibodies against the injected serum and thus accelerating its elimination. Severe anaphylactic reactions to the serum also

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occasionally occur. Moreover, an individual who has once been inoculated with horse serum (whether it was tetanus antitoxin or some other horse serum derivative) is likely to be sensitized against any horse serum preparation injected at a later date. This sensitization will generally lead to earlier and more marked serum sickness and will also lead to accelerated destruction of the antitoxin injected. In addition to these disadvantages, all of which limit the value of tetanus antitoxin, it is by no means entirely dependable as a prophylactic. Ever since World War I it has been well known that occasional cases of tetanus will occur in individuals given the standard prophylactic dose of tetanus antitoxin. Martini[4] cites two recent examples and summarizes many other similar reports. Still another important limitation to the usefulness of antitoxin is that it cannot protect against the considerable number of cases (reportedly as high as 50 to 60% of all cases of tetanus[5]) which occur in individuals whose injuries were so obscure or trivial that they were not treated by a physician. Finally, there is some evidence that the antibody resulting from active immunization is more effective, unit for unit, than that provided by passive immunization.[6]

Active immunization with tetanus toxoid, properly carried out, has essentially none of the disadvantages of passive prophylaxis. It is therefore the procedure of choice whenever it can be effectively employed, and it is widely practiced throughout the world.

Nevertheless, the prophylaxis of tetanus as currently practiced leads to a number of pertinent questions to which the practicing physician requires answers. The following questions are among those most commonly asked: 1. What is the actual degree of certainty that tetanus toxoid immunization, properly performed, will prevent tetanus? 2. How soon after completion of primary toxoid immunization (i. e., the first two or three injections, depending on the product and procedure employed) is a person immune to tetanus? 3. How long does this initial immunity last? 4. Should a reinforcing dose of toxoid be given and, if so, when? 5. How long does immunity last after basic immunization (i. e., primary immunization plus a reinforcing dose) is completed? 6. Are routine follow-up booster doses of toxoid indicated, and, if so, how often should they be given? 7. How long after a booster dose will a patient still be immune, and for how long will he remain capable of responding adequately and promptly to an emergency booster dose of toxoid? 8. How rapid is this response? Is there a difference in the rate of response, depending upon whether fluid or precipitated toxoid is administered, or upon the interval since the last booster dose? 9. Are there circumstances in which an injured patient with a valid history of toxoid immunization should nevertheless be given antitoxin as well as toxoid? 10. In the unimmunized injured individual, when should prophylactic antitoxin be given, and what is the optimal dosage under the various conditions seen in practice? 11. In such a patient, is it practical to undertake simultaneous active immunization with tetanus toxoid?

For some of these questions, fairly direct answers are at hand. For most of them, however, there are no data from which an answer can be obtained directly. Decision must therefore be based, insofar as possible, on experimental observations, modified or interpreted in accordance with the physician's judgment as it applies to the particular case which confronts him.

Use and Effectiveness of Tetanus Toxoid in Routine Immunization

Reagents and Procedures.—Active immunization against tetanus may be carried out with fluid toxoid (FT) or precipitated toxoid (PT; this symbol will be used to refer without distinction to alum precipitated, aluminum hydroxide adsorbed [Alhydrox], and aluminum phosphate adsorbed preparations, since there appears to be little basis for making any significant immunological distinction between them). Active immunization may also be effected with pediatric preparations such as diphtheria and tetanus toxoids combined with pertussis vaccine (Dip-Pert-Tet, Triple Antigen) (DPT) or combined diphtheria and tetanus toxoids (DT); preparations primarily applicable to adolescents and adults, such as combined tetanus toxoid and typhoid-paratyphoid vaccine (TABT) used extensively by the Canadian, French, and Italian armed forces, and "tetanus-diphtheria toxoid, adult type" (Adult Dip-Tet) (TD),[7] now used by the American armed forces and coming into general use for adolescents and adult civilians in the United States whenever immunization against both tetanus and diphtheria is warranted.[8] A new preparation now recognized for pediatric use is one combining diphtheria, tetanus, pertussis, and poliomyelitis antigens [8A] (Quadrigen, Tetravax).

Indications for Active Immunization Against Tetanus.—The indications for active immunization against tetanus are manifold. The reason for its extensive use and the ways in which community-wide immunization can be approached have been superbly set forth in a special report by the London, Ontario, Academy of Medicine.[2g] Since the inoculation of tetanus toxoid is virtually free of side-effects, and since tetanus may occur in any human being, there is no actual contraindication to making tetanus immunization universal. However, since this ideal cannot readily be achieved in the immediate future, the physician can focus his efforts on those groups in whom tetanus immunization is especially indicated. Thus, Christensen [2c] recommends tetanus immunization for (1) all child health programs, industrial immunization programs, or other routine immunization programs reaching large groups; (2) allergic individuals and those who have had previous injections of antitoxin or any horse serum preparation; these persons are most likely to be sensitive to antitoxin and therefore may be unable to receive it when they need it most; (3) patients who have been previously treated for tetanus, and who may therefore get only very transient benefit from it because of their accelerated response against horse serum as a foreign protein (contrary to a widespread belief, such patients need active immunization against tetanus; since this disease does not immunize against itself, numerous cases of recurrent tetanus have been reported); (4) various groups subject to an apparently greater than average risk of tetanus-prone injuries, i. e., farmers, hunters, operators of heavy machinery, particularly in the open where injuries incurred may be contaminated with dirt; and (5) military personnel. Some would add to this list pregnant women, particularly those women living in areas where tetanus neonatorum is common. This proposal has been criticized on the ground that immunization of expectant mothers may make it more difficult to immunize the young infant against tetanus, due to the interfering effect of maternally transferred antitoxin.[9] However, this difficulty can be surmounted, as noted later.

Effectiveness of Tetanus Toxoid.—Experience gained primarily in World War II has provided overwhelming evidence that tetanus toxoid immunization, adequately carried out, is one of the most highly effective immunization procedures ever devised.[10] The tetanus rate in the U. S. Army, which in World War I was approximately 13 per 100,000 injuries and fell to the lower level of 2.4 per 100,000 during the period between World Wars I and II, was held to the incredibly low level of 0.44 per 100,000 injuries (12 cases in over 2,500,000 injuries) in World War II. Of these 12 cases, only 6 had had any toxoid injections, and only 4 of these had had basic immunization plus an emergency booster dose. Five deaths from tetanus occurred, of which two had received an emergency booster dose. This is truly a remarkable record, particularly when compared to the experience of the Japanese army, of German prisoners of war who, except for the Luftwaffe and paratroops, were not immunized, and of civilians in tetanus-prone areas where fighting was intense and civilian injuries were widespread. The tragic story of tetanus among Philippine civilians during the liberation of Manila [10c] provided a striking contrast to the absence of tetanus among the Americans who fought and suffered injuries under the same conditions.

Just how effective is tetanus toxoid? No active immunization procedure is wholly perfect, and even tetanus toxoid is no exception. Several apparently genuine failures to achieve protection with tetanus toxoid immunization have been reported (see table). Some are inadequately documented, some followed incomplete initial immunization, several occurred years after primary or basic immunization, and a few had received basic immunization plus a routine booster injection. However, there have been seven reported cases (all in military personnel) whose records indicated that they had received basic immunization, as well as an emergency booster at the time of injury. These reports show that tetanus can occur in an individual whose record indicates that he has been adequately immunized against tetanus. Nevertheless, the exceptional rarity of such cases, particularly in the American and Canadian armed forces, indicates that the hazard of tetanus in a properly immunized individual is far less significant than many other day-to-day risks arising in association with illness, injuries, and surgery.

Tetanus in Immunized Persons

Author	Immunization Status	Cases, No.	Deaths, No.
Long[10a]	Primary only	2	0
	Routine booster 3 mo. previous	1	0
	Emergency booster	4	2
Hall[10b]	Uncertain	1	1
	Primary only	1	0
	Emergency booster	1	0
Moss[10d]	Primary and routine booster	2	1
	Emergency booster	1	0
Boyd[10e]	Primary* or incomplete	7	3
	Routine booster(s)	9	2
	Emergency booster	1	0
Stafford[10f]	Unconfirmed	2	0
Hedrick[10g]	Primary only	1	0
	Routine booster (date not given)	1	0
Boyer[10h]	Primary or incomplete	9	7
	1 booster, 3 yr. previous	1	1
Christensen[10i]	Primary, 10 yr. previous	1	0
	Unconfirmed	1	0

* Primary immunization in British army = 2 doses of fluid toxoid. Data based on British and Commonwealth troops only, as given in Boyd,[10e] table 4.

Except for the aforementioned record of failures, all information regarding the effectiveness of tetanus toxoid—including studies on the efficacy of various injection schedules, on fluid versus precipitated toxoid, on the duration of immunity, and on the timing of booster doses—can be based only on antitoxin titrations of immunized subjects. What do these titrations actually mean? Numerous attempts have been made to correlate circulating antitoxin levels with the degree of protection obtained. Obviously, the question can be answered only by analogy from results in experimental animals. Most of the available and informative studies on the subject were summarized and discussed by Looney and others.[11] Many investigators have selected 0.1 unit of antitoxin per milliliter of serum as the "threshold of protection," usually by analogy with levels observed up to a week after injection of 1,500 units of antitoxin. However, it has been found experimentally that levels below 0.01 unit may be sufficient to protect animals from death, although symptoms have occasionally occurred at higher antitoxin levels. Indeed, the early observations of Ramon and Descombey in horses, over 30 years ago, suggested that antitoxin levels of about 0.001 unit will give protection, and a remarkable human experiment supports this concept. Wolters and Dehmel [12] injected themselves with a dose of tetanus toxin calculated to be in the neighborhood of two to three human minimal lethal doses. At that time, each of them had a serum antitoxin level between 0.005 and 0.01 unit. Neither individual suffered significant symptoms after the inoculation, yet the amount of toxin given was sufficient to induce a booster response in each of them. Thus, despite the widespread acceptance of 0.1 unit as the "threshold of protection," there is very good reason to believe that a level of 0.01 unit or even lower is adequate.

Immunological Response to Tetanus Toxoid.—It is important to understand clearly the basic pattern of response which follows primary immunization and the subsequent administration of a reinforcing dose. The sequence of events has been vividly depicted by Evans,[13] whose findings may be summarized as follows. One month after the first injection *the response was barely detectable, if at all.* At this time a second dose was given. A fairly marked response occurred, the antitoxin level rising briefly to a peak titer averaging about 0.5 unit. However, at the end of about one year, the level had sunk to an average value somewhat below 0.1 unit. One-half of Evans' subjects were then given a third dose. Within 30 days their average antitoxin titer was close to 10 units. Most important, however, was the fact that one and one-half years later the subjects who had received a reinforcing dose still had levels averaging close to 0.4 unit, whereas those who had not received a reinforcing dose had fallen to an average of about 0.04 unit. Thus, the initial two doses, although they gave protection for upwards of a year, did not insure lasting protection. By contrast, the subjects who received a reinforcing dose at one year not only were well protected a year and a half later but possessed titers high enough to give a margin of protection for several years thereafter. Evans' findings are typical of the results obtained by many other investigators. Clearly, the importance of the "reinforcing dose" cannot possibly be overestimated. As stated by Christensen and Stilwell,[24] the 6-to-12-month "reinforcing dose" should be regarded as an "integral and fundamental part of the original immunization procedure," and not as a "booster" dose in the usual sense.

Thus, *there are three stages in adequate tetanus* immunization: the first injections, the reinforcing dose, and subsequent booster doses. The first injections will be referred to in this report as "primary immunization," whereas the term "basic immunization" will be used to describe the completed basic procedure which comprises not only primary immunization but an appropriately timed reinforcing dose as well. This concept of adequate basic immunization is, of course, already well recognized in the scheduling of poliomyelitis vaccination and most pediatric immunizations. Moreover, the importance of the reinforcing dose has also been clearly demonstrated in diphtheria immunization.[14]

The discussion which follows will generally be in terms of the use of precipitated toxoid for routine immunization, unless otherwise specified.

Interval Between Basic Injections.—It has long been known that the interval between injections has an important influence on the antibody response. During the past 30 years a number of investigators have shown, specifically for toxoids, that such antigens lose much of their efficacy if they are given in doses less than about three weeks apart. Sachs [15] has shown that six weeks may be even better. The minimum interval at which the reinforcing dose will be effective is not so clearly defined, but it is well established that lengthening the interval generally increases the effectiveness of the injection. Thus, the time at which this dose should be given is not rigidly fixed and may depend, in part, upon the circumstances of handling the patient. If the patient were to be unavailable for injection at the usual interval of 10 to 12 months (e. g., because of travel), *it is justified to give the reinforcing dose as* early as 6 months after initiating immunization. In other words, there are no absolute fixed intervals at which injections of tetanus toxoid (or of any other antigen) must be given, but there are minimum intervals below which the desired effect may not be obtained and maximum intervals beyond which it may not be safe to wait for completion of immunization.

Response in Young Infants.—Immunization of young infants against tetanus normally presents no problem,[16] but, *if done in combination,* as with DPT, difficulty may arise in inducing satisfactory immune levels against diphtheria or pertussis, due to the well-established interfering effect of antibodies transferred passively from the mother through the placenta. This inhibition of antibody formation in very young infants can be largely, but perhaps not entirely, compensated for by the reinforcing dose given 6 to 12 months later.[17] However, to avoid this problem, many schedules advise postponing immunization of infants with DPT until three to six months after birth.

On the other hand, the prevention of neonatal tetanus can be approached through immunization of pregnant mothers living in areas where neonatal tetanus is not uncommon. This has indeed been advocated,[18] but it has also been warned against,[9] *since it might interfere with effective neonatal* antitetanus immunization. Nevertheless, it would appear immunologically sound to employ antenatal tetanus toxoid immunization in areas where neonatal tetanus is a serious problem and then to establish adequate tetanus immunity in the infants, either by postponing immunization until age three to six months or by giving an extra dose of the immunizing agent as part of the primary immunization schedule.

Competition of Antigens.—From animal experiments it has long been known that, under certain circumstances, when two or more antigens compete, as it were, for the response of the antibody-forming tissues, the stimulus induced by one antigen may be suppressed. Barr and Llewellyn-Jones [19] have more recently proposed the vivid term "crowding out" for this phenomenon. Only recently Chen and his associates [20] have demonstrated that this phenomenon can be observed in man. They showed that, in children with preexisting diphtheria immunity, primary immunization with DPT led to lower tetanus and pertussis antibody responses than were found in children without such preexisting immunity. However, a later paper by Chen and co-workers[21] indicated that, after a reinforcing dose at one year, antitoxin levels in the two groups became almost identical. Essentially similar findings were obtained by Wiener, Patterson, and MacKenzie.[22] Thus, to date, there is no clear-cut evidence that the problem which might be created by "crowding out" cannot be surmounted by currently accepted immunization schedules.

Duration of Effect of Primary Immunization.—As noted previously, custom has dictated that the reinforcing dose is ordinarily given about one year after primary immunization, although it is permissible to give it as early as six months later. This implies the assumption that primary immunization will give the necessary degree of protection against unrecognized injuries for at least one year and that it will maintain responsiveness to a subsequent reinforcing or emergency booster dose of toxoid for this period of time. It is of interest that about 10% of American soldiers[23] and a higher proportion of Canadian soldiers[24] in World War II had titers below 0.01 unit one year after primary immunization. Nevertheless, the extremely low incidence of tetanus in these two groups suggests that the protection achieved by the procedures then used was exceptionally high. Since that time, the potency of toxoids has markedly increased, and in four more recent studies[25] only one small group, who were given two doses of fluid toxoid six weeks apart, has shown a comparable proportion of subjects below 0.01 unit at the end of one year.[15] Thus, it is safe to conclude that primary immunization with currently available toxoids, in adequate doses (i. e., at least two doses of precipitated toxoid or three doses of fluid toxoid), will serve its purpose as previously defined. However, it should be clearly noted that, if emergency tetanus prophylaxis is indicated during the waiting period between primary immunization and the reinforcing dose, a booster should be given. If such an emergency dose is given before six months have elapsed, it should be counted as part of the primary immunization. If given after six months, it should be regarded as the reinforcing dose.

From time to time special circumstances will suggest to the physician that, in a particular patient, augmentation of the primary immunization schedule may be desired, for example, if a patient were to be unavailable for the scheduled reinforcing dose. In any such situation—indeed, whenever the physician recognizes the need of an extra immunological stimulus for his patient (e. g., as with neonatal immunization)—an additional injection in the primary immunization schedule will accomplish the desired result.

Maintenance of Tetanus Immunity—Routine Booster Dose.—With tetanus immunization—as with most immunization procedures—after basic immunization has been established, each subsequent injection of the antigen leads to a rapid rise in the antibody level, followed by a drop which at first is rapid but later becomes very gradual; hence, measurable antibody levels usually persist much longer than after primary immunization. Successive injections of tetanus toxoid or certain other antigens induce successively higher peak responses, higher residual antitoxin levels, and longer periods during which antibodies are detectable. Thus, just as the reinforcing dose augments the protection begun with primary immunization, the injection of suitably timed booster doses will further augment the level of immunity and greatly prolong its effect. Actually, the function of periodic booster injections is twofold. In the first place, they reestablish a high level of immunity which normally lasts for several years, thus protecting the patient against tetanus infections arising from trivial or ignored injuries. Secondly, they maintain the subject in a state of responsiveness to toxoid, so that if an emergency booster is subsequently indicated, the patient will react to it promptly and vigorously. Thus, the periodic booster dose not only greatly enhances protection against tetanus but it obviates the occasional necessity of depending on antitoxin for prophylaxis because of uncertainty regarding the patient's active immunity status.

Frequency of Administration of Booster Dose.—There is as yet no basis for defining precisely the optimal interval between such booster inoculations. Some physicians have given them as frequently as every one or two years, but there is no clear immunological justification for such frequent injections. The American armed forces have adopted an interval of four years, which is apparently wholly satisfactory. Others have adopted or suggested five years or three years. The difference between three and five years appears to be immaterial; the main point is that some regular procedure should be adopted in order to insure that routine booster injections are not overlooked.

Several studies carried out during the past decade[26] indicate that the levels sustained after a booster, as well as the capacity to respond to a subsequent booster, are maintained for much longer intervals than was at first supposed. Bigler[25b] followed up 300 infants, for various intervals up to 10 years, who had been given two or more basic injections of diphtheria-tetanus toxoid. Every subject still had a measurable serum antitoxin level. Although high levels of antitoxin were less commonly found more than five years after the last dose of tetanus toxoid, many of these children retained high levels for as long as eight to nine years.

Similarly, in eight subjects observed by Regamey and Schlegel[26b] 10 years after basic inoculation with TABT, the lowest titer found was 0.075 unit. In 52 other subjects inoculated from one to nine years prior to the study, the lowest titer was 0.0075 unit. Looney, Edsall, Ipsen, and Chasen[11] studied a group of 144 veterans 1 to 10 years after their last inoculation of toxoid. Ten per cent of these subjects were found to have antitoxin levels below 0.025 unit per milliliter. However, the frequency of low titers showed no relation to the interval since the last injection of toxoid. Similarly, Turner, Stafford, and Goldman [25c] titrated tetanus antitoxin levels in 145 subjects, mostly veterans. Half of them had received their last dose of toxoid from 5 to 11 years previously, whereas the other half had been injected less than 5 years before the study. The median antitoxin level in the former group was tenfold lower than that found in the more recently injected subjects. However, only six subjects in the longer-interval group and three in the shorter-interval group had fallen to less than 0.01 unit when tested.

Equally well-sustained levels were observed by Peterson and colleagues [26c] in 200 veterans tested up to 13 years after their last tetanus toxoid injection and by Moss and co-workers [10d] in 100 Canadian ex-service men. The latter group included three individuals in whom the interval since their last inoculation was 11, 13, and 15 years. These three, incidentally, were the only ones in Moss' study whose titers had fallen below 0.01 unit. In the group studied by Peterson, 5 of 106 subjects observed seven or more years after their last injection had titers below 0.01 unit, whereas none of 41 subjects studied less than four years after their last toxoid injection were in this low range. Here again it appears that tetanus antitoxin levels will be sustained for a number of years after adequate basic immunization and a booster dose, with only a gradual fall in titer over the years.

This finding is not unique; similar results have been reported by Bojlen and Scheibel [14a] in children immunized against diphtheria with two primary doses of precipitated diphtheria toxoid and a reinforcing dose one year later. In these children the average antitoxin titers were essentially the same, whether the interval was three, six, or nine years after administration of the reinforcing dose.

These findings are consistent with the remarkable degree of clinical protection achieved in military personnel during World War II and in the Korean episode [10a] and with Ipsen's [8] finding that tetanus in civilian life has been markedly reduced since World War II among males in the veterans' age group. Thus, again it appears that the standard American and Canadian military practice is highly effective in preventing tetanus.

The data presented suggest the possibility that the interval between routine boosters might be lengthened to as much as 8 to 10 years. However, because there is a definite tendency for the antitoxin level to fall gradually [27] and also because data on titers at the longer intervals are relatively scanty, it would seem wise not to separate routine periodic boosters by more than four or five years.

Reactions to Tetanus Toxoid.—Annual booster injections of 0.1 cc. of toxoid given intradermally have been advocated [2f] as a method of insuring the maintenance of a "perennial state of immunity." Such a schedule has the advantage of regularity and convenience, although it has not been demonstrated that the "poor responder" will respond better to this schedule than to larger doses given less frequently. On the other hand, there may well be contraindications to overfrequent immunization, since a small but growing number of unpublished observations indicate that rather marked delayed-type local reactions—basically not unlike those seen in individuals sensitive to diphtheria toxoid—have occurred in people receiving tetanus toxoid after numerous previous inoculations of this substance. It is not unlikely that the repeated inoculation of any antigen may, in a small proportion of subjects, induce a delayed-type hypersensitive state of the type known as "tuberculin allergy" or "delayed bacterial allergy" and similar to the reaction to the tuberculin test or the Moloney test. Furthermore, it appears probable that such sensitization is somewhat more likely to result from the intracutaneous route than from other routes of injection.[28] Therefore, it appears wise to avoid overimmunization and to give only as many inoculations of tetanus toxoid as are clearly justified. It is worth mentioning that the presence of delayed-type hypersensitivity in a patient cannot, in practice, be ascertained prior to injection of an emergency booster dose of tetanus toxoid, as has been suggested.[29] Not only has no such test been standardized sufficiently to provide a basis for its interpretation but the wait of 24 to 48 hours required for reading the test would preclude its use in an emergency.[30] If doubt exists as to a patient's tolerance for toxoid and if an emergency booster dose is indicated, a small dose (e. g., 0.05 to 0.1 cc.) may be given subcutaneously and the rest of the dose given 12 hours later if no reaction has occurred. If a marked reaction should ensue, further toxoid injections at that time may be safely omitted, since it has been shown years ago that reducing the dose of tetanus toxoid does not proportionately reduce the magnitude of the response obtained.[31]

It should be noted that the delayed-type reactions are totally different from the immediate, urticarial-type reactions, occasionally reported as following the injection of tetanus toxoid. Some reactions of the immediate type have been shown to be due to the trace contamination of the toxoid with unrelated substances.[32]

In general, however, reactions to tetanus toxoid are so extremely rare as to be almost insignificant. Aside from the occasional delayed-type reaction noted and the rare reaction to extraneous substances, there are doubtless a few—a very few—individuals with a true allergic sensitivity to the toxoid protein itself. If such patients are observed, it is to be hoped that thorough immunological studies on them will be reported.

Response to Booster Dose.—A number of the studies cited have recorded the degree and in some cases the rate of the response to a booster dose, given from 1 to 15 years after the last previous injection of toxoid.[26] In general, when titrations are done seven days or more after a booster injection, only a few individuals will exhibit titers below 0.1 unit, and levels below 0.01 unit will be extremely rare. For example, all of about 140 subjects tested by Bigler one to two weeks after a booster dose showed ample antitoxin levels.

Regamey and Schlegel [20b] observed good antibody responses in all of their 60 subjects at intervals from 1 to 10 years after their last inoculation; the minimum titer observed by them (six days after the booster injection) was 0.15 unit. All but one of the subjects studied by Looney and co-workers [11] and all of the subjects studied by Turner and co-workers,[25c] Peterson and co-workers,[26c] and Moss and colleagues [10d] showed a good response to the booster dose. Thus, it appears well established that a routine booster dose of toxoid, given as long as 15 years after the last injection of toxoid, will induce a rise in antibody level, except in the rare individual who cannot respond to an antigenic stimulus.

Rate of Response to Booster Inoculation.—The rate of response has been under study for many years. Recent studies have employed larger groups and, in many cases, better antigens than the earlier studies, so that they probably provide a sounder basis for answering the question. In three subjects studied by Bigler,[25b] the injection of precipitated toxoid was followed by a rise in antitoxin level beginning in three, four, and five days respectively. Among Regamey's and Schlegel's 60 subjects, the lowest titer observed four days after the booster was 0.035 unit. Turner and colleagues found 2 out of 48 subjects with a level below 0.01 unit and 8 below 0.1 unit four days after a fluid toxoid booster; however, all had risen to >0.01 (and all but 2 to >0.1) by the seventh day. In Looney's group,[11] four subjects showed levels below 0.025 unit six days after a booster dose of precipitated toxoid. Two of these showed excellent subsequent responses; one (as noted previously) showed essentially no response at all, and one could not be followed up. Peterson and co-workers tested titers six to seven days after the booster. At this time all 216 of their subjects had levels above 0.01 unit, and all but two were above 0.1. Ninety-four of Moss' subjects, when tested one week after a booster injection, had a level of over 0.1 unit of antitoxin.

Miller and colleagues [33] noted that the speed of response appeared to be somewhat slower in subjects whose basic immunization had occurred more than six years earlier. The four subjects observed by Looney, who failed to respond within six days, had all received their last inoculation five or more years previously. These scanty data suggest that the rate of response may be slower when the interval since boosting has been longer, and thus give further justification to the recommendation that routine booster inoculations be scheduled at intervals no longer than five years.

Thus, it appears that perhaps 95% of subjects receiving a booster injection will respond within four days, and about 100% within seven days, even when 10 or more years have elapsed since the last inoculation. The few exceptions appear to be predominantly among subjects who have not received toxoid for over five years.

Miller and colleagues [33] compared the effect of fluid toxoid and precipitated toxoid, with regard to the rate of response after a booster injection. They found that increases in antitoxin titer (levels not given) appeared within four to five days in 30 out of 33 subjects given a booster with fluid toxoid, but in only 15 out of 34 subjects given precipitated toxoid. These findings have provided the basis for the widespread recommendation that fluid toxoid be used for emergency booster injections rather than precipitated toxoid. The findings of Schlegel [34] are similar; 13 out of 15 subjects injected with a booster dose of fluid toxoid (given seven to nine years after basic immunization with combined tetanus toxoid and typhoid-paratyphoid vaccine) showed a rise in level four days later, in contrast to only 1 out of 12 receiving precipitated toxoid. The studies of Volk and co-workers [35] on diphtheria immunization appear to provide additional evidence for the assumption that the response to a fluid toxoid booster may be somewhat faster than that to a precipitated toxoid. On the other hand, Ipsen,[8] using identical Lf doses of toxoid in paired experiments, found that with either 1 Lf or 5 Lf, the antitoxin levels reached at one week were five to seven times higher after administration of precipitated toxoid than after giving fluid toxoid. Moreover, neither Miller nor Schlegel stated the Lf titers of the toxoids they employed, so that it is impossible to tell whether their groups were genuinely comparable. Thus, the choice between fluid toxoid and precipitated toxoid for the emergency booster is still not unequivocally decided.

Management of Patients with Tetanus-prone Injuries

General application of the immunization procedures just discussed would prevent practically all cases of tetanus which might otherwise follow trivial or unrecognized wounds. However, each recognized injury must be considered individually, and the handling of such injuries varies according to the circumstances subsequently discussed.

It cannot be emphasized too often that the most important procedure in the handling of tetanus-prone injuries, regardless of immunization history, is adequate cleansing and débridement of the injury. Clearly, tetanus can occur only when susceptible tissue is infected with tetanus bacilli, and no history of immunization can eliminate the necessity of removing, insofar as possible, both the foreign material and the intruded epidermis which introduce tetanus infection and the necrotic tissue which nurtures it. The ubiquity in nature of the tetanus bacillus is not always fully recognized; it is independent of obvious "dirt."

As regards specific prophylaxis, various general recommendations have been outlined. Christensen [2e] advocates tetanus toxoid alone if the subject has an adequate history of toxoid immunization within five years. If over five years have elapsed, "particularly if the patient has a more serious injury such as a compound fracture, extensive burns, crushing injuries, gunshot or shrapnel wounds," he recommends giving tetanus toxoid and 1,500 units of antitoxin simultaneously at different sites. However, if the patient is sensitive to horse serum, he advises depending on toxoid alone. For the unimmunized subject who has sustained a tetanus-prone wound, Christensen advocates 1,500 to 3,000 antitoxin units, or more if indicated. He outlines in detail a procedure for testing patients for sensitivity to horse serum and for "desensitizing" positive patients with slowly increasing doses of antitoxin.

Parish, Laurent, and Moynihan [21] itemize the types of injury that require tetanus prophylaxis. They list (1) wounds over three to four hours old; (2) definitely infected wounds; (3) wounds through skin probably contaminated by soil; (4) all deep and punctured wounds; (5) wounds with devitalized tissue, e. g., crushing injuries; and (6) wounds that cannot be closed properly. They cite the fairly rigid definitions of "actively immune" and "non-immune" patients adopted by the British army several years ago, but which I find unduly conservative in the light of current knowledge regarding the response to primary or basic immunization.

The definition of the "non-immune" subject is not simple. Unfortunately, it must include all those subjects in whom there is a vague history or suspicion of a history of tetanus toxoid immunization but no definite confirmation. It will, perforce, include those subjects who say they have been "immunized" to tetanus but cannot specifically show that what they had was tetanus toxoid immunization, rather than tetanus antitoxin, diphtheria toxoid, "typhoid," or some other inoculation readily confused with tetanus toxoid by the layman. It will include individuals who have only had one dose of toxoid, and it should probably include individuals who had only primary immunization (but no "third dose" or boosters) more than five years previous to the injury in question. Finally, there is, of course, a large group of individuals who have clearly not had any tetanus toxoid inoculations. Thus, tetanus-prone injuries may be sorted into three categories, depending on whether they occur in a well-immunized individual, in an individual with waning or latent immunity, or in a patient with an inadequate, unreliable, or negative history of immunization against tetanus.

Clearly, the effective use of tetanus toxoid in the emergency prophylaxis of tetanus is dependent not only on adequate prior immunization but also on available and reliable evidence that this has been actually carried out. It is universally recognized and advocated [27] that veterans of military service may be regarded as having had tetanus immunization and may be handled accordingly. Over and above this, definite knowledge regarding a patient's immunity status is usually limited to a physician's own records. This is a deplorable situation and can only be remedied by a sustained, united effort on the part of the medical and public health professions.

It would be desirable for all immunized persons to carry with them a record of their tetanus toxoid injections; even though such records may get lost or may not be kept up to date, it is obviously better to have such records available frequently than not to have them at all. Parish [30] has recently stated the case for this practice lucidly and cogently and has advocated the use of metal disks for this purpose. To supplement such records, a central community file could be set up, maintained by the county medical society or by the health department.[28] When such personnel and central file records become generally available, much of the uncertainty which now clouds the handling of tetanus-prone injuries will be eliminated.

Handling of Immunized Patient.—From the data cited, it would appear that an individual with a history of properly performed primary tetanus immunization, administered within the previous five years, is virtually certain to show an ample response to an emergency or "wound" booster dose, beginning within five days after the booster injection. For such patients, a booster dose of toxoid should provide ample immunological protection against tetanus if it is given within 24 hours, regardless of the type of injury. If serious delay has occurred in giving toxoid and if the injuries are such that fulminating tetanus might be expected, then the physician may, in individual cases, weigh the advisability of giving 1,500 units of antitoxin at the same time, at a separate site. (Since 1950 the American unit and the International unit have been identical. Prior to this date an International unit contained one-half as much antitoxin as an American unit.)

When the interval since the last dose of toxoid has been more than 5 years and less than 10 years and when the patient has a clear-cut history of adequate basic immunization, an emergency booster dose of toxoid will be sufficient prophylaxis for ordinary injuries treated promptly. However, if delay has occurred in administering toxoid and if the risk of tetanus is self-evident (e. g., gunshot wounds, compound fractures, dirty wounds difficult to débride and expose), there is some theoretical justification for giving a simultaneous injection of 1,500 units of antitoxin. Even when more than 10 years have elapsed since the last dose of toxoid. prompt administration of a booster dose of tetanus toxoid will suffice to protect the patient in the vast majority of instances. Nevertheless, here the physician's judgment is paramount, and in such patients the procedure of giving a booster dose of toxoid simultaneously with 1,500 units of tetanus antitoxin is a justifiable, though conservative, method of providing additional prophylaxis in the presence of clearly tetanus-prone injuries. It must be weighed, however, against the likelihood of unfavorable reactions to the antitoxin.

Interval Between Emergency Booster Doses.—Frequently a patient is seen with a tetanus-prone injury, a few months after a known, recorded, previous booster dose of tetanus toxoid, and the thoughtful physician will naturally ask himself whether another booster dose is needed. Parish and colleagues [2j] have recommended that a booster dose which was given within the preceding 18 months renders another booster dose unnecessary. Others have set up a 12-month limit,[37] a limit of "a year, and possibly several years," [38] or a three-year limit.[26c] The available data do not provide a basis for an absolute rule on this question, but, in view of the extensive evidence [26] that protective antitoxin levels persist in a vast majority of subjects for much longer than a year, I would recommend a one-year interval of freedom from repeat booster injections except in patients in whom massive tetanus infection appears to be a definite hazard.

Effectiveness of Combined Active-Passive Immunization in Previously Immunized Persons.—Simultaneous administration of toxoid and antitoxin has been suggested previously as a method of handling certain situations in which genuine, serious doubt arises regarding the adequacy of a toxoid booster dose alone. This practice appears to be immunologically sound. Miller, Ryan, and Beard [30] demonstrated the efficacy of such a procedure in rabbits. They then gave 1,500 units of tetanus antitoxin and a booster dose of tetanus toxoid, simultaneously but in a separate site, to four patients previously immunized with toxoid.[30a] Three of their subjects showed vigorous antitoxin responses by the fourth or fifth day; the fourth subject showed essentially no response, and the authors believed that this subject was immunologically a poor responder. A larger group of 23 subjects was studied by Sachs [15] who gave 1 cc. of fluid tetanus toxoid and 500 units of antitoxin in opposite arms of the patients at the same time. By the 9th to 12th day, all subjects had titers from 1 to 100 units.

Thus, in certain selected previously immunized subjects, simultaneous active and passive immunization, achieved by injecting 1,500 units of antitoxin and (at a separate site) a routine booster dose of toxoid, provides a needed combination of immediate and long-term protection against tetanus. This procedure tides the patient over the period of uncertain protection during the first few days in those with waning immunity, potentially fulminating infection, or serious delay in administering toxoid. It should be borne in mind that the booster effect of the toxoid might well be blanketed if more than 1,500 units of antitoxin were given. Moreover, there is no immunological justification for larger doses of prophylactic antitoxin in such patients.

Tetanus Prophylaxis in Unimmunized Patients.—For unimmunized patients, the classic procedure, standardized toward the end of World War I, has been to administer 1,500 units of tetanus antitoxin as soon as the patient with a tetanus-prone injury has been evaluated for sensitivity to horse serum. Space does not permit a detailed discussion of the controversial views which are at hand regarding what constitutes an adequate basis for determining a patient's sensitivity to horse serum. The usual practice is to perform intradermal or conjunctival tests, or both, with epinephrine immediately at hand in the event of an untoward reaction.[2e]

On the other hand, Laurent and Parish [40] maintain that neither the intradermal nor the conjunctival test is reliable, both false-positive and false-negative reactions having been seen with both tests. They quite properly point out that a carefully elicited history of allergic conditions or previous serum injections is of paramount importance, and they would replace "sensitivity tests" with a small subcutaneous trial dose in persons with histories suggesting allergy. Their proposal to discontinue skin and eye tests will not be readily accepted unless more evidence is accumulated that such tests are misleading; however, the "trial dose" concept—if employed with great caution—would appear to deserve further careful study.

If it is not possible to débride the injury adequately, it has been customary to administer successive 1,500-unit doses of antitoxin at intervals of one to two weeks two or three times or until the wound has healed. It is undoubtedly true that this procedure contributed to the remarkably low incidence of about 1 case per 7,700 wounds or injuries in the United States army during World War I. Between World Wars I and II, the rate dropped further to 1 case per 40,000 wounds and injuries. This is really a remarkable record but is, nevertheless, short of the ideal of the practicing physician.

One suspects that the incidence of failure may be higher in civilian life. Certainly, there are numerous recorded instances in which the prompt injection of 1,500 units of antitoxin has failed to prevent tetanus. Hence, many physicians such as Martini [4] and Spaeth [2f] recommend giving 10,000 or more units of prophylactic antitoxin routinely in all cases in which its use is indicated. Others [2e] have suggested a range of 1,500 to 30,000 units depending on the circumstances, whereas many others [2h] stand by the classic dose of 1,500 units. Stotzer [2i] suggests that "rather than following a rigid standard (in employing 1,500 units of antitoxin routinely) it would seem better to use this as a minimum dose and adjust the dosage to the patient's need." Stafford [2h] would omit antitoxin entirely in subjects who are sensitive to horse serum. He recommends keeping such patients under close observation and starting tetanus toxoid injections immediately.

Thus, there is no general agreement regarding the dose of antitoxin to employ in the prophylaxis of tetanus in the unimmunized individual. Indeed, there are those [41] who appear to doubt that the usual dose of prophylactic tetanus antitoxin is efficacious at all. This nihilistic view is unjustified, and genuine evidence to support it is not presented. The observation cited by Stafford that, in Baltimore, tetanus has occurred just as often in patients given antitoxin prophylaxis as in those not so treated is actually uninterpretable, since there is no information on the proportion or the severity of injuries for which antitoxin was given. Furthermore, aside from the World War I experience,[15] there is ample experimental evidence, dating back many years, that antitoxin prophylaxis can prevent the occurrence of tetanus in experimentally infected animals.

Assuming that prophylactic antitoxin is indicated in a given situation, what dose will provide virtually certain protection, without unduly increasing the incidence of serum sickness and the risk of other serum reactions? This question cannot be answered on the basis of experience in man. In any case, the answer will vary with the type of injury, the feasibility of adequate débridement, the interval since injury, and the immunological status of the patient with respect to horse serum. Thus, it is impossible to predict correctly the patient in whom 1,500 units of antitoxin will fail to give protection. Therefore, when the administration of antitoxin is clearly indicated, it is logical to advocate larger doses as a routine measure. Increasing the dose of antitoxin given to a normal patient will somewhat accelerate the appearance of antitoxin in the circulation and will increase the duration of the protection, so that the risk of fulminating tetanus or late tetanus—the two most likely causes of failure to protect with a small dose of antitoxin—will be diminished.

On the other hand, in a patient who possesses antibodies against horse serum (the type of person who characteristically manifests accelerated serum sickness), an increase in the dose of antitoxin given may not materially prolong its effectiveness. Confirming the classic observations of von Pirquet and Schick and of Rackemann and Longcope, Mahoney and Moloney[42] have shown that, in general, tetanus antitoxin disappeared from the circulation more rapidly in patients who had serum sickness than in those who did not exhibit this complication. Nevertheless, as a general rule, an increase in the dose of prophylactic antitoxin is definitely indicated if there has been delay in treating the wound, if the injury is difficult to débride and decontaminate, or if there is massive contamination of necrotic tissue. In such cases, the prophylactic administration of penicillin may be of some value. However, it must be remembered that penicillin is no substitute for specific prophylaxis and adequate débridement of the injury. The final decision must be made by the physician, who must balance his estimate of the risk of tetanus in the patient against the immediate, as well as the possible ultimate, consequences of administering antitoxin.

Since failures to protect a patient with 1,500 units of antitoxin have been recognized for over 40 years, why was not the recommended prophylactic dose increased long ago? The answer probably lies in the fear of serum reactions, not merely serum sickness, which is well known to increase in frequency with larger doses of serum, but also the danger of more serious complications such as neuritis, myelitis, periarteritis nodosa, deafness, pericarditis, myocarditis, encephalopathy, or fatal anaphylactic shock. However, the very general adoption of enzyme-purification methods has led during the past 20 years to the production of antitoxin of greater purity and a lower incidence of serum sickness than formerly.[43] With such improved methods available, there should be less hesitation in giving as much antitoxin as the physician's judgment of the tetanus hazard indicates. Nevertheless, the limitations in the effectiveness of increasing the dose and the hazards that accompany the administration of serum should always be borne in mind.

In my opinion, when prophylactic tetanus antitoxin is medically indicated, 3,000 to 5,000 units should be an adequate dose in patients over 10 years of age if seen on the day of injury, except in the case of compound fractures, gunshot wounds, or other wounds not readily débrided. Delay of more than one day or the presence of complications such as those cited would indicate a dose of 6,000 to 10,000 units or more, depending on the circumstances of the individual case. Half of the stated dose should suffice in children under 10 years of age.

Active-Passive Immunization in the Unimmunized Subject.—The physician who is obliged to administer tetanus antitoxin to a patient because active immunization was never instituted will naturally want to obviate such an event occurring in the future, especially since reinjection of antitoxin is not only more likely to cause an untoward reaction but is likely to be more transient in its effect. Thus, it is logical to institute active immunization in patients who have received prophylactic antitoxin.

It has often been advocated that such patients be given tetanus toxoid at the same time as antitoxin, thus starting the patient on a course of immunization which, once having begun, he is presumably more than likely to finish. This procedure was recommended over 30 years ago by Ramon and has been employed for the control of both tetanus and diphtheria. The data on its effectiveness as regards tetanus are not explicitly clear. There have been several studies on this point in animals but few in man. Gold and Bachers[44] reported that the simultaneous administration of alum-precipitated tetanus toxoid to individuals given 1,500 units of antitoxin, followed by a second dose of toxoid two to three months later, led to a normal and adequate immune response in these individuals. When fluid toxoid was employed, three doses were essential to elicit a satisfactory antitoxin level. On the other hand, Huber[45] found that, with two doses of precipitated toxoid given 18 days apart, the response was not fully satisfactory when the first dose was given simultaneously with 1,500 units of prophylactic antitoxin. Hence, a third dose given some time later was indicated if active immunization was to be successfully instituted. Thus, although it is possible to institute simultaneous active-passive immunization with precipitated toxoid and 1,500 units of antitoxin, the results do not appear to be as reliable as those obtained with toxoid alone. Stated differently, these studies suggest that, if active-passive immunization is employed, three doses of toxoid should be given in order to achieve satisfactory results. Moreover, if large doses of antitoxin are administered, simultaneous active-passive immunization is apparently impractical,[46] and initiation of active immunization must definitely be delayed for several weeks; the waiting period depends on the amount of antitoxin given. In other words, the procedure of active-passive primary immunization may be employed when psychological or other circumstances warrant it, but it cannot be definitely relied upon unless no more than 1,500 to 3,000 units of antitoxin are given, and unless three doses of toxoid are included in the basic schedule. Fluid toxoid appears to be less efficient for this purpose.[17]

Summary

Active and Passive Immunization.—Passive immunization against tetanus provides immediate but transient protection against tetanus. In contrast, active immunization with toxoid leads to a slowly developing but long-lasting immunity. Passive immunization has numerous disadvantages and has never, at its best, given as high a degree of protection as does active immunization. Hence the latter is the procedure of choice for the specific prophylaxis of tetanus, whenever time and circumstance permit it to be applied.

Use and Effectiveness of Tetanus Toxoid in Routine Immunization.—Tetanus toxoid is one of the most effective and innocuous immunizing agents known. Since all human beings are subject to some chance of contracting tetanus, all people should, ideally, be immunized with toxoid. In particular, high-risk groups and groups readily reached en masse should have such immunization as a matter of routine medical and health policy. Adequate immunization against tetanus may be achieved with a variety of separate or combined preparations. It is important to administer at least three doses of fluid toxoid or two doses of precipitated toxoid in order to establish acceptable primary immunization. "Basic immunization" may not be regarded as completed until an additional reinforcing dose is given, preferably 6 to 12 months after primary immunization. This reinforcing dose greatly enhances and prolongs the immunity established with primary immunization. Immunization of infants is readily accomplished, but, if the infant is born of an immunized mother, an extra dose of toxoid (or the appropriate combined vaccine) is recommended as part of the primary immunization. Such an extra dose is also recommended whenever there is specific indication for early achievement of a high and lasting level of immunity.

Immunity to tetanus, once established by adequate basic immunization, should be maintained at a protective level by periodic booster doses. The level of immunity falls, though very slowly, for years after basic immunization or reimmunization. Hence, it appears wise to administer booster injections at intervals of four to five years. Shorter intervals are not ordinarily indicated, especially since there is some evidence that repeated inoculations may lead to sensitization of the delayed type in a small proportion of patients. Longer intervals—up to 10 years or more—do not appear to decrease the capacity of the booster dose to elicit a response, but the rate of response may perhaps be somewhat slower.

A detectable rise in antitoxin level after a booster injection occurs in almost all subjects within five days and sometimes sooner. There is some evidence, though not unanimous agreement, that fluid toxoid elicits a slightly more rapid response than does precipitated toxoid.

Management of Patients with Tetanus-prone Injuries.—The prevention of tetanus after an injury is dependent first upon adequate surgical care of the injury, with emphasis upon débridement and exposure of the injured area and removal of foreign material. Specific prophylaxis with tetanus toxoid will be of incontestable value if the patient has a known reliable history of primary immunization within five years or of primary immunization plus reinforcing or booster doses at any time. Prompt injection of tetanus toxoid in such patients will give adequate protection against tetanus in practically all cases. However, simultaneous injection of 1,500 units of antitoxin, at a different site, may be considered for patients with clearly tetanus-prone injuries under conditions of exceptional risk, such as a delay of more than 24 hours in treating a massively contaminated or deeply penetrating injury, an interval of over 10 years since the last injection of toxoid, or, in intermediate situations, a combination of delay in treatment and severity of injury. The combined use of toxoid and antitoxin, in those few situations in which it is indicated, will minimize the risk of fulminating tetanus during the interval prior to the appearance of the booster response to tetanus toxoid. This advantage is to be balanced against the hazard or inconvenience of a possible reaction to the antitoxin.

The long persistence of protective residual antitoxin titers after a booster dose will serve to prevent many cases of tetanus arising from trivial or unrecognized injuries and will render unnecessary the repetition of successive emergency booster injections of toxoid at close intervals, except when the risk of massive tetanus infection is apparent.

In patients without a valid history of adequate tetanus toxoid immunization, tetanus antitoxin must be employed for emergency prophylaxis of tetanus-prone injuries. The customary dose of 1,500 units does not give entirely reliable protection, and a dose of 3,000 to 5,000 units is recommended when prophylaxis of tetanus is medically indicated. This dose should be increased if complete débridement is impractical or if significant delay has occurred in treating the injury.

The unimmunized subject should be immunized as soon as practical. It is possible to begin active immunization at the same time as prophylactic antitoxin is given, but the procedure is effective only if the dose of antitoxin is relatively small and if an extra dose of toxoid is included in the primary immunization schedule. Precipitated toxoid is preferable to fluid toxoid for this purpose.

Because of space limitation the references will be published in the author's reprints only.

THE JOURNAL
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NEW DATA ON MORBIDITY FROM CANCER

FINAL analysis of valuable new data on cancer in the United States appears in a monograph published by the United States Public Health Service.[1] The basic data were obtained in a survey begun in 1938 by the National Cancer Institute, and they relate to 10 metropolitan areas. The study of intercity differences therefore is possible. The 1937-1938 morbidity study of the 10 cities was published in 1944.[2] Since two decades have elapsed from the time the survey began, it is possible to examine the data for secular trends.

Preliminary study of the basic data showed that office patients were much less likely than hospital patients to have the diagnosis of malignancy verified by histological examination of biopsy or autopsy material. The relation of socioeconomic status to the incidence of cancer in various sites is one significant feature of this study. The difference between office and hospital patients and the fact that the percentage of patients who do not go to a hospital varies greatly in different parts of the country were duly taken into account in interpreting the results. This is but one illustration of the complexity of a problem which was investigated with great care.

After corrections for age, the incidence rates for male and female were found to be essentially equal, but striking differences were found between races and among the various age groups. Outstanding, perhaps, is the increased susceptibility of older persons, so that by age 90 the chance of developing cancer is 200 times that at ages 5 to 15 years. For cancer of the lung, urinary bladder, stomach, and prostate, no consistent differences appeared in the age distributions of cases when classed by stage of disease at diagnosis. It was not certain that cases first diagnosed at time of death or after remote metastases had developed could have been diagnosed at an appreciably younger age. This agrees with the results of a study in Connecticut which showed little progress in the early recognition of cancer in inaccessible sites and revealed that in the case of cancers of the digestive system the percentage diagnosed while still localized was actually less in 1947-1951 than it had been in 1935-1940.[3] This is significant in view of the current assumption (and hope) that the early diagnosis of cancer increases the likelihood of successful treatment.

Another common assumption is that mass screening programs, periodic health examinations, and alertness on the part of patients and physicians will increase the likelihood of early diagnosis and so increase the likelihood of successful treatment. Here the analysis becomes extremely difficult. The results again are not encouraging, for the data do not lend any sound support to either assumption. One is reminded of a statement made eight years ago that "It has not been proved that the survival rate of cancer of the breast, using the 5-year survival rate as an index, is affected by treatment at all."[4] A similar conclusion was reached in a recent study of 230 cases of untreated breast cancer by Philipps, who found that the survival rate calculated from onset of symptoms was consistently higher for treated patients but that the differences were not significant.[5]

The new data are also analyzed with respect to some geographical factors. While statistical data usually answer only the questions they are designed to answer, when they are classified geographically it is always possible that sharp regional differences might lead to the recognition of some peculiarity of soil, weather, flora, fauna, food, occupation, or social patterns of fundamental significance. In the present analysis no fresh clues as to the etiology of cancer are uncovered. The present investigation is outstanding for the breadth of its scope and the care with which the results have been interpreted. Paradoxically, much of its value is in some of the negative conclusions to which it leads. This helps to clear the way for work in other directions. The need for continued research could not be more pressing.

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THE PRESIDENT'S PAGE

A MONTHLY MESSAGE

"Doctor, I have been named to my local society's grievance committee. But I am not going to serve. I see no reason why I should be put on the spot, taking abuse from patients and colleagues who don't like the committee's decision."

This is part of an actual conversation I had recently with a physician during a stopover in the Midwest. I disagreed with the doctor for several reasons and I enumerated them to him like this:

First, I believe that participation in local and society affairs definitely helps to make an individual a better physician in the community. For example, if each of us were to serve a two, three, or four year term on a grievance committee, I am convinced that we would gain a great deal of understanding and knowledge of patients and ourselves.

Second, I do not believe that patients or colleagues resent fair and reasonable decisions that are rendered after careful and thorough considerations of both sides of a grievance.

And third, the grievance committee is a valuable service performed by the medical society for the public and for the profession. The resolving of grievances is our responsibility to patients. If by our indifference and disinterest we fail the public, then an outside agency or authority is certain to be brought in to assume our functions—no matter how rightfully they now belong to us.

Let's remember, too, that the grievance committee protects the ethical practitioner as well as guarding against the unethical physician. Just as the grievance committee will condemn the exorbitant fee and the unnecessary medical procedure, so it also will exonerate the good doctor against the indiscriminate and groundless accusations of the "griper" and the complainant who demands the most from his physician but who often wants to pay little or nothing.

This kind of protection to its medical society members is a responsibility of the grievance committee. On the other hand it is only proper and necessary that all physicians in the society cooperate with the committee. They must present data to the committee when requested and must appear before the committee when asked. To do less is to erode the usefulness and effectiveness of the grievance committees.

The committee, of course, has certain responsibilities to the physicians and the patients who are parties to the alleged grievance. It must not think that a grievance is too complicated. All the facts must be gathered. It must not postpone a decision, hoping that delays might "kill" the grievance.

Members also must be straightforward in their approach, reviewing the case objectively. To allow personalities to enter the case or the decision is a disservice to the patient, to the physician, and to the entire medical profession.

Service on a grievance committee is not for the mushmouths, the spineless, or the mindless. Membership requires an ability to call the shots as one sees them.

In my opinion it would be unfortunate if even one of our more than 1,100 grievance committees were to be turned into a "whitewash" committee. But if physicians are apathetic and indifferent to their service or their duties on the committee, then I am afraid we are in for a good deal of justified criticism.

Selection to serve on a grievance committee is to me a distinct honor. To reject it out of fear of what someone might say is bad enough; to accept it and serve without interest and vigor is a real tragedy.

Louis M. Orr, M. D.
Orlando, Fla.

ORGANIZATION SECTION

STATEMENT TO INTERSTATE AND FOREIGN COMMERCE COMMITTEE ON S. 1283

August 13, 1959

Senator Warren G. Magnuson, Chairman
Interstate and Foreign Commerce Committee
United States Senate
Washington 25, D. C.

Dear Mr. Chairman:

We have been advised that your Committee is currently conducting hearings with respect to S. 1283, 86th Congress, a bill to regulate the interstate distribution and sale of packages of hazardous substances intended or suitable for household use. I would like to request that this letter, which outlines the position of the American Medical Association, be inserted in the record of the hearings.

Uniform legislation to require precautionary labeling of all chemical products containing hazardous substances has been an objective of medical and health groups for nearly a century. Over 75 years ago, the American Medical Association adopted a resolution urging Congress and the various state legislatures to enact legislation to require lye to be sold as a poison and under a poison label. Later resolutions were adopted in 1910 and 1918 urging the proper labeling of caustic poisons. These actions culminated in the formation of an Association Committee, under the Chairmanship of Dr. Chevalier Jackson, a noted otolaryngologist of Philadelphia, to obtain legislation regulating the sale of caustic products.

In 1923, the House of Delegates of the American Medical Association adopted a resolution which called attention to the fact that the domestic use of concentrated lye and other caustic alkalies and corrosive substances was a recurring cause of death and distressing disability among children. It recommended, in the interest of public health and safety, that the packing, labeling and distribution of such substances be regulated by law. The Association Committee thereafter prepared a model state law and a bill for introduction in Congress. The Federal Law was enacted in 1927, and the model state bill has been enacted in a number of states.

Since that time many new compounds for household, commercial and industrial use have been introduced which are not covered by the above mentioned legislation. Presently, there is no broad law which requires the precautionary labeling of hazardous substances at the national level. Various attempts have been made in recent years to extend the scope of existing legislation to require precautionary labeling of potentially harmful chemicals in commerce. The first of these attempts was the Bingham bill of 1932 which called for the labeling of certain chemical products, particularly those evolving injurious vapors. This bill served to focus attention on the need for a sustained, dynamic program for the development of precautionary labeling for hazardous chemicals.

Several years ago, at one of the periodic meetings of the American Medical Association's Committee on Toxicology with various chemical industry groups, a recommendation was made that the AMA consider the development of model legislation to require precautionary labeling of household and industrial chemicals not so regulated. The Committee was subsequently authorized to undertake this task and has spent two years surveying existing legislation, reviewing various labeling schemes proposed in this country and abroad, and consulting numerous associations and qualified authorities. This study has revealed the need for:

(1) A broad and encompassing label law as a weapon in any successful attack on accidental poisoning from harmful chemicals. Lack of information about hazardous ingredients in cases of poisonings have enhanced their gravity by complicating or delaying treatment.

(2) Directing such a law toward the reduction in careless handling and storage of potentially harmful products, which are found in and around the house, in small businesses, and in other areas where the control of exposure to chemicals is not as guarded as in the manufacturing process. The law should require informative labeling, which would include a list of hazardous ingredients, their potentialities for harm, directions for safe use, and first-aid instructions.

(3) Similar labeling standards for chemicals for export to foreign countries, thereby obviating the recurring complaint that less-than-standard products are sold to foreign purchasers.

(4) Label warnings based on the anticipated degree of danger and the use of words and symbols that facilitate recognition. In practice, however, few persons are sufficiently interested or informed to analyze the precise shades of meaning given to the signal words such as "danger," "warning" or "caution" and thereby act accordingly. Therefore, consideration should also be given to the use of familiar warning symbols such as a flame for inflammable substances or a skull and crossbones for very poi-

sonous substances because they are readily recognized and meaningful even to the illiterate. The use of carefully chosen symbols in conjunction with the signal word "danger" for substances presenting the greatest hazard would facilitate recognition and bridge the language barrier.

In this connection, the following modifications of S. 1283 are recommended in order to provide adequate protection for the user of such products in the home or at work:

(a) Extend the scope of the bill to apply to all hazardous substances "distributed as packaged chemicals for non-manufacturing purpose" rather than simply to those "intended or suitable for household use."

(b) Require the same labeling for chemicals exported to foreign countries as those for domestic consumption by deleting the word "not" on line 1 page 11.

(c) Include appropriate warning symbols (safety pictographs such as the skull and crossbones) to various types of hazard (i. e.—flammable, explosive, poison) associated with the more dangerous products. In this connection, the Committee's attention is invited to the warning symbols adopted by the International Labor Organization and the United Nations for explosive, flammable and poisonous materials.

On behalf of the American Medical Association, I would like to thank you for the opportunity of presenting our position with respect to S. 1283, 86th Congress.

Sincerely,
F. J. L. Blasingame, M.D.
Executive Vice-President

DR. TALBOTT APPOINTED EDITOR OF THE JOURNAL

The Board of Trustees has appointed Dr. John H. Talbott, professor of medicine at the University of Buffalo School of Medicine and physician-in-chief at Buffalo General Hospital, as Director of the Division of Scientific Publications and Editor of The Journal.

Dr. Talbott was born in Grinnell, Iowa, in 1902, and received his medical degree from Harvard Medical School in 1929. He interned at the Presbyterian Hospital, New York, then returned to Harvard and to the Massachusetts General Hospital in 1931, serving, except for five years in military service, in teaching and clinical positions until 1946, when he became physician-in-chief at the Buffalo General Hospital. He did postgraduate work at the University of Göttingen, Germany, in 1932, and at the University of Innsbruck, Austria, in 1937. He was a member of an International High Altitude Exposition to South America in 1935 and a member of a team that studied the frostbite problem among U. S. troops in Korea in 1951. For 11 years he has been editor of *Medicine,* a quarterly journal devoted to advances in research in medical science. Commissioned in the U. S. Army Medical Corps in World War II, he served as chief of laboratory services at the Sixth General Hospital and as commanding officer of the Climatic Research Laboratory at Lawrence, Mass., for which services the Legion of Merit was awarded.

Dr. Talbott will take over his new duties about October 20, succeeding Dr. Johnson F. Hammond, who for 37 years has been on the staff of The Journal as news editor, assistant editor, associate editor, and editor, except for three years during World War II when he served in the Surgeon General's Office to organize and edit the *Bulletin of the U. S. Army Medical Department,* for which service the Legion of Merit was awarded. Dr. Hammond will continue his service on The Journal as Editor Emeritus.

STATEMENT OF DR. FREDERICK C. SWARTZ TO THE SUBCOMMITTEE ON PROBLEMS OF THE AGED AND AGING

SENATE LABOR AND PUBLIC WELFARE COMMITTEE

August 5, 1959

Mr. Chairman and Members of the Subcommittee:

I am Dr. Frederick C. Swartz of Lansing, Michigan, Chairman of the American Medical Association's Committee on Aging. The medical profession applauds the Senate's concern with the aged and aging and the way in which this subcommittee is going about its work. It is commendable that you have set out to gather all available facts before seeking any conclusions. Your approach to this complex subject is similar to our own. We too have been after the facts since 1955, when the A. M. A. first appointed its Geriatrics Committee and charged it with the responsibility of studying the diseases of the aged.

We quickly realized that there are practically no diseases of the aged. There are simply diseases among the aged, which is a far different thing. We concluded, therefore, that the real area of our concern was more properly the health of the aged and aging. The Geriatrics Committee was renamed the Committee on Aging, and ever since, every aspect of living which bears directly or indirectly on the health of our older people has been under our intensive study. Good health is far more than the mere absence of disease or infirmity. This is only its negative side. Health is also the positive state of physical, mental, and social well-being, and any factor which detracts from that well-being detracts from the individual's total health.

Loneliness, rejection, and lack of useful things to do affect the general health of the aged. Hardening of the arteries is certainly no worse than softening of the will to live. This applies to every human being, but particularly to the aged. The older person wants just about the same things that the rest of us do: to be part and parcel of his environment; to be loved; to belong; to feel that his skills and talents have value, and that they will be used and appreciated. These are the fundamentals. We are, however, prone to forget them when we discuss the problems of the aged. We tend to talk in terms of medical need. We forget that medicine does not function in a vacuum but in the context of a society. In that context, medicine becomes only a segment of the broad spectrum of health in its broadest sense.

All of us—no matter who we are, what we do, or where we live—have definite responsibilities in regard to our elder citizens. We believe it is society's responsibility to stimulate, in older people, that intangible quality called the will to live. I have seen people with this quality survive illnesses against which they seemed to have little chance. I have seen people without this quality die long before they should. The will to live is the difference between fighting on and giving up—the difference between staying in the mainstream of life, active and interested, or becoming segregated and remote from life, a passive spectator who no longer cares. People who feel rejected, shunted to the sidelines by society, all too often lose the will to live. Medical and hospital care, important as they are, can never compensate for rejection. To stay alive and make their later years full and rewarding, old people must care, but they will not care unless we make it plain that we want them to care because we care about them—that we value their wisdom and experience and are anxious to use it.

We believe that it is society's responsibility to encourage our elders in their desire to be self-reliant, to maintain faith and pride in themselves. Most of these people don't want to be the wards of anyone. They want a helping hand if needed, but not a handout. Anything that undermines the self-respect of a man or woman undermines health and saps the will to live. I know of an elderly woman, plagued with all sorts of physical problems, who repeatedly urged the son with whom she lived to accept part of her own limited income for household expenses. The son neither wanted nor needed the money, but he finally agreed. It wasn't at all important to him, but it was important to her. She felt she had regained her self-respect. Her health improved accordingly.

We believe it is society's responsibility to assist older people in their desire to be treated as individual persons, each with different physical chemistry, different hopes, different needs. The 15 million persons we are talking about are alike in only one way: they are all 65 years of age or older. They are not a homogeneous group. They have no uniform list of wants that can be met by some convenient, all-encompassing master plan. They are individual persons, and we must always remember it. Many work at the old job still—some because they want to, others because they must. Many have retired—some because they had to, others because they wanted to. Many are finding a life rich and deeply satisfying. Others are ready to throw in the sponge. The point is that all of them are different.

Moreover, we believe that it is society's responsibility to encourage our elder citizens in their desire to be useful. Actually, this is more than a desire: It is a right. The right to be useful should be just as inalienable as the right to dissent or any other right. Somewhere, someone, sometime, decided that the age of 65 years was old. It was as unsound a judgment as it was arbitrary, but once uttered, it was the first step to the conclusion that 65 was too old, and the idea spread. As ridiculous as it seems, numberless Americans now believe that 65 candles on the birthday cake disqualify a man for anything better than baby-sitting, whittling, or sleeping in the sun. This is shockingly evident in the field of employment, where a man's right to be useful is frequently abridged by compulsory retirement policies.

Many of the same firms that hire so carefully, taking into account the person's training, skills, attitudes, and potentials, find nothing inconsistent in the retirement of a valuable employee by a chronological rule of thumb. This is a case where no one benefits—neither the employer nor the worker compelled to retire. Most of our older people want to work and need to work, and good employees are not easy to replace. Retirement is fine for those who want it, but age should not be the determining factor. Some men are old at 50. Others are vigorous and capable at 75. Personnel policies should be flexible enough to take this into account and to use the yardstick of ability instead of the yardstick of age.

It may not seem that the matter of compulsory retirement has much to do with health, but I can assure you, as a physician, that it does. A man who has spent a quarter of his life learning to become independent, and a half of his life being independent, is suddenly cut off from his work. Suddenly he has been denied the right to be useful. Unprepared for the sudden change in status, he finds himself at loose ends, burdened by a leisure he hasn't learned how to use. All at once he notices a subtle change in the attitude of his family, of his friends, of his community. He is no longer the breadwinner. He has become overnight a man who no longer works for his living, a man whose time hangs heavily on his hands, a man whose stature has mysteriously diminished.

To compensate for that which he has lost, he often develops aches and pains, and whether some of them are imaginary or not, he suffers just the same. The doctor who treats this man is faced with a sociological as well as a medical problem. Physicians have yet to find an antibiotic for loneliness or rejection. We must, therefore, think of the medical challenge as only a segment of the total challenge. While the physician practices preventive medicine and seeks to forestall the disabling illness which can cripple an older person, society must also take the necessary steps to meet the other existing needs that are just as important. Society must, through education, prepare people for retirement and old age. It must think in terms of the older person's many other requirements, whether they be in housing, recreation, or community understanding. Until society recognizes this fact, we will be taking a piecemeal, hit-or-miss approach to a problem that demands a broad-spectrum solution.

In much of the world no challenge is posed by a large number of old people. In much of the world they just don't get old. They die young. Thank God we in America have the "problem" of 15 million Americans who constitute one of our greatest assets, and thank God an increasing number of persons and groups have accepted the challenge and are beginning to meet it. The medical profession, together with the many others who work in the field of health, is proud of having increased the life span of the average American. This increase in years has been accompanied by a rise in health levels for all ages, including those over 65. It is the responsibility of all our citizens to work together to insure that the lives we have helped prolong are as satisfactory in their later years as they were in youth.

I promise you, gentlemen, that the American doctor will do his part and more, but the answers that must be found and the solutions that must be reached involve every segment of our population: every profession, occupation, industry, labor organization, religious denomination, civic group, community, and—most important of all—every family unit. All must share the common responsibility.

I am proud that the solutions are being found, that real progress is being made through the cooperative efforts of private citizens. Working voluntarily, they are proving their ability to do the job in their own communities—and do it effectively and well. A few specifics from their record of accomplishment are appended to this testimony. The medical profession has continued in its role of providing leadership and support to the general voluntary effort. At this time it is enough to say that retirement villages, new nursing homes, chronic disease care centers, home care programs, recreational facilities, and research projects are being set up from coast to coast in substantial number, and many more are on the way.

Our state and local medical associations have moved promptly to make the American Medical Association's six point program, which I discussed with this subcommittee in June, an effective and workable instrument. The medical needs of the aged involve the chronic illnesses and the so-called degenerative diseases. In a large percentage of patients the main need is not for an expensive hospital stay or a surgical operation, but for medical care at home or in the doctor's office. In others, the important requirement is nursing care in the patient's home, or the home of relatives, and in still others, custodial care in a nursing home or public facility may be the only answer. The point is that the medical needs of this particular segment of the population are subject to countless variations.

Wherever possible, we try to keep our older patients out of institutions and functioning in society. Our object is to help them lead lives as normal as possible—lives which will minimize their dependence. This means that we want them to have easy access to medical and hospital services, adequate and suitable housing, specialized and personal services, and sources of rehabilitation where needed. We are working to reduce the cost of services, which calls for new and improved facilities specially tailored to the particular requirements of the older citizen. The A. M. A. has therefore supported a government-insured loan program of the F. H. A. type for nongovernmental hospitals and nursing homes, whether of a nonprofit or proprietary nature. It has recommended changes in the Hill-Burton Act to help the individual states earmark more money for nonprofit nursing homes.

The A. M. A. continues to back further experiments with progressive hospital care, home care programs, and homemaker services, all of which have the common purpose of reducing the length of hospital and nursing home confinement by allowing the earlier discharge of patients. To encourage the trend to private health insurance, the A. M. A. House of Delegates adopted a proposal which applies specifically to those over 65 with modest resources or low family income. In this proposal, the A. M. A. urged physicians to set their fees at a level which will permit the development of insurance and prepayment plans at a reduced rate. The reaction, by state and local medical associations, has been heartening.

There are now 25 plans in 23 states in which Blue Shield plans enroll those over 65, and all Blue Shield plans now permit persons over 65 to continue their coverage. Further, in almost every other state in the country, our medical societies, in cooperation with the plans they sponsor, are working out programs of a similar nature. We believe the solutions we seek are to be found in private and voluntary action at the community level, and in private health insurance and prepayment plans which have made revolutionary progress since World War II and are still increasing their gains. At the end of 1945, only 32 million people were covered under such voluntary programs; but by the end of 1958, the number had soared to 123 million. Putting it another way, fewer than one

American out of three had health protection in 1945, yet today, the figure is nearly three out of four.

This is important, for it indicates that prepayment plans and the health insurance industry, by providing more and expanded health coverage for all age groups, are anticipating and solving tomorrow's health care financing problem. Each year, more and more of the Americans who are reaching 65 are covered. The problem of financing health services for the aged is therefore a temporary, not a permanent one. Dozens of different type policies are now available. Among them are policies guaranteed renewable for life; policies to cover those over 65; coverages that will continue after retirement; and group policies that may be converted to individual coverage on termination of employment.

According to the Health Insurance Association of America, 60% of our senior citizens who need and want health insurance will have protection by the end of next year. Further, that percentage will increase until 75% will be covered in 1965, and 90% in 1970. In other words, the problem of financing the health care of our older people is being met by private insurance and prepayment plans; and the particular hospital and medical needs of the aged are being met by voluntary effort, by private citizens, at the community level. The health professions and the communities are doing the job—a job they know and understand.

Dr. Michael M. Dasco, director of physical medicine and rehabilitation at New York's Goldwater Memorial Hospital, recently expressed in *Life* magazine an opinion with which I thoroughly agree. He said:

> In our society, the responsibility for taking care of the old person rests primarily with his family. If the family cannot fulfill this responsibility, then it passes to the community, then to the state. Only as a last resort should the federal government step in.

A sage but unknown author summed up most effectively the point that age is relative when he wrote:

> Youth is not a time of life. It is a state of mind. It is a temper of the will—a quality of the imagination—a vigor of the emotions. Nobody grows old by merely living a number of years. People grow old only by deserting their ideals. Years wrinkle the skin, but to give up enthusiasm wrinkles the soul. Worry, doubt, self distrust, fear and despair—these are the long, long years that bow the heart and turn the greening spirit back to dust. Whether sixty or sixteen, there is in every human being's heart the lure of wonder, the undaunted challenge of events, the unfailing child-like appetite for what next, and the joy of the game of living. We are as young as our self-confidence, as old as our fear; as young as our desire, as old as our despair.

I should like to thank the members of this subcommittee for the opportunity of expressing some of the views of the medical profession on the problems of the aged and aging. I shall be glad to attempt to answer any questions you may have.

GOVERNMENT SERVICES

FEDERAL AVIATION AGENCY

Personal.—The following key appointments in the office of the civil air surgeon were made: Dr. John E. Smith, chief, research requirements division; Dr. Homer L. Reighard, chief, medical standards division; Dr. James H. Britton, chief, medical certification division; Dr. Paul T. Bruyere, chief, standards evaluation branch; Capt. Carl E. Wilbur (U.S.N.), chief, accident studies branch; and Major Wayne R. Otto (U.S.N.), chief, rules and procedures branch. These men will serve under the direction of Dr. James L. Goddard, recently named FAA's first civil air surgeon.

PUBLIC HEALTH SERVICE

Plan to Improve Mental Health.—Surgeon Gen. Leroy E. Burney appointed an *ad hoc* committee to develop a basis for improved planning of mental health facilities throughout the nation in response to a recommendation of state mental health authorities. The group will work with the Public Health Service in formulating therapeutic and administrative guidelines which can be used in developing statewide plans for mental health facilities. In the past, emphasis was placed on providing large institutions for the care of the mentally ill. Services now being developed include outpatient and emergency service through hospital clinics or mental health centers and increased use of general hospitals for the treatment of psychiatric patients, halfway houses, and nursing homes.

The committee, to meet in Washington, D. C., Oct. 12 and 13, includes Dr. John J. Bourke, executive director, New York Joint Hospital Survey and Planning Commission, Albany; Dr. Bernard Bucove, director, Washington State Department of Health, Seattle; Dr. Dale C. Cameron, director, division of medical services, Minnesota State Department of Public Welfare, Minneapolis; Dr. R. L. Cleere, director, Colorado State Department of Public Health, Denver; Dr. Terrell O. Carver, administrator, Idaho Department of Health, Boise; Dr. Hiram W. Davis, commissioner, Virginia State Department of Mental Hygiene and Hospitals, Richmond; Herbert G. Fritz, chief, division of hospitals, Maryland State Department of Health, Baltimore; Dr. Stewart T. Ginsberg, commissioner, division of mental health, Indiana State Department of Health, Indianapolis; Dr. Jack C. Haldeman, chief, division of hospital and medical facilities, Public Health Service, Washington, D. C.; Dr. Robert T. Hewitt, chief, hospital consultant services, Community Services Branch, National Institute of Mental Health, Bethesda, Md.; Mrs. Louise Waagen Masters, director, division of hospital facilities, New Mexico Department of Public Health, Santa Fe; and Dr. Harold L. McPheeters, commissioner, Kentucky State Department of Mental Health, Louisville.

COUNCIL ON NATIONAL DEFENSE

MEDICAL CIVIL DEFENSE CONFERENCE

The Council on National Defense, American Medical Association, is sponsoring the 10th annual conference of the County Medical Societies Civil Defense Organization. The conference will be held at the Morrison Hotel, Chicago, on Nov. 7-8, 1959.

Program

These yearly conferences are planned to inform and otherwise assist medical and health personnel for their respective roles in disasters. Conferees have the opportunity (1) to participate in workshop sessions concerning medical preparedness to cope with disasters, (2) to discuss and exchange information dealing with emergency medical services, (3) to be informed on the availability of pamphlets and articles devoted to the medical and health aspects of civil defense, and (4) to hear outstanding speakers report on appropriate civil defense and disaster topics.

On the afternoon of Dec. 1, 1958, fire broke out in Our Lady of the Angels' school in Chicago. There were 95 deaths and several hundred school children were casualties. Three months later, a tornado hit St. Louis. The toll was several fatalities, 300 casualties, and extensive property damage. Disasters like these are constantly testing our individual and community stamina. They test our civil defense preparedness. There is no better way, short of war, to determine the operational capabilities and adequacy of medical civil defense planning.

Two reports at the conference will discuss the hospital and medical disaster programs in operation during the school fire and tornado.

A highlight of the conference will be a talk by Congressman Melvin Price on the environmental and biological effects of nuclear warfare. Recent hearings conducted by a Joint Congressional Atomic Energy Subcommittee assumed that a hypothetical attack produced 48,900,000 deaths. In spite of the tremendous number of deaths and staggering number of casualties created by the attack, the one-week hearings ended with the conclusion that the nation could recover from such an attack and that protection measures are feasible and could greatly reduce the casualties. Congressman Price is a member of the Joint AEC Committee.

What you should know about chemical and biological warfare will be one of the topics discussed at the conference. Major Gen. Marshall Stubbs, Chief Chemical Officer of the Army, is the speaker on this subject. As a result of testimony by leading military experts on CB warfare possibilities, the House Committee on Science and Astronautics recently issued a lengthy report recommending an increase to about 125 million dollars a year for research in this field by the Army Chemical Corps and a program to broaden public understanding of the dangers and uses of CBR agents.

Registration and Reservations

The conference group is self-supporting. As in the past, a registration fee is charged to defray the costs of the two luncheons and other administrative expenses of the conference. The registration fee is $10. Those planning to attend the conference are urged to mail their registration cards and fees promptly. The Morrison Hotel, 79 W. Madison St., Chicago, has set aside a block of rooms for the convenience of conferees. Individuals are urged to write directly to the hotel for reservations, making mention of the conference. Those desiring additional information about the conference are requested to contact Mr. Frank W. Barton, Secretary, Council on National Defense, American Medical Association, 535 N. Dearborn St., Chicago 10.

SATURDAY—NOV. 7, 1959
SOUTH CONSTITUTION ROOM, MORRISON HOTEL

8:00- 9:00		Registration—1st Floor Foyer
9:00- 9:05		Call to Order CARL J. SPRUNK, M.D.
9:05- 9:15		Welcome Address FRANKLIN D. YODER, M.D.
9:15-10:55		Civil Defense in the Federal Government
	9:15- 9:35	(a) The OCDM Program LEWIS E. BERRY
	9:35- 9:55	(b) Medical and Health Activities—OCDM W. PALMER DEARING, M.D.
	9:55-10:15	(c) The U. S. PHS Program CARRUTH J. WAGNER, M.D.
	10:15-10:35	(d) The VA Program WILLIAM S. MIDDLETON, M.D.
	10:35-10:55	(e) Military Assistance for Civil Defense Capt. HENRY T. GANNON, MC, USN
10:55-11:10		Break Period
11:10-11:40		Congressional Review of Environmental and Biological Effects of Nuclear Attack Honorable MELVIN PRICE
11:40-12		Operation of Small Hospital During Chicago School Disaster J. E. SEGRAVES, M.D.
12:00-12:30		Disaster Education in Medical Schools STANLEY W. OLSON, M.D.
12:30- 2:00		Luncheon—North Constitution Room Civil Defense Fantasies and Realities GEORGE R. PRICE, Ph.D.

Members of the program committee are Carl J. Sprunk, M.D., Chairman, Francis C. Jackson, M.D., and Frank W. Barton.

2:00- 2:15 Assembly for Workshop Sessions—South Constitution Room

2:15- 5:00 Workshop Sessions
Conferees to divide into four groups to discuss specific medical and health CD topics. Summary written reports of the workshop sessions will be prepared and distributed to all conferees.
I—Organization and Utilization of Hospital and Auxiliary Hospitals for Civil Defense, Including Location and Use of 200-Bed OCDM Hospital—South Constitution Room
Group Leaders: W. Palmer Dearing, M.D. and John N. Hatfield
II—Practical Aspects of Radiation Hazards and Shelter Protection—Parlor B
Group Leaders: Justin J. Stein, M.D. and Harold C. Lueth, M.D.
III—Practical Aspects for Mobilization and Training of Medical and Health Personnel in Care of Mass Casualties—Parlor C
Group Leaders: Carroll P. Hungate, M.D. and Carruth J. Wagner, M.D.
IV—Provision for Nonmedical Utilities and Services in Disasters—Parlor D
Group Leaders: Frank F. Schade, M.D. and Curtis H. Lohr, M.D.

6:00- 7:00 Social Hour—North Constitution Room

SUNDAY—NOV. 8, 1959
SOUTH CONSTITUTION ROOM

9:00- 9:15 Training Medical Aides for Civil Defense
Charles L. Leedham, M.D.

9:15- 9:30 The CD Role of Pharmacists
(Speaker to be selected.)

9:30- 9:50 Errors in Civil Defense Thinking
E. A. Burkhardt, M.D.

9:50-10:10 Business Session
Carl J. Sprunk, M.D., Presiding

10:10-10:30 Collection and Transportation of Casualties and Positioning of Emergency Medical Aide Teams
Joseph R. Shaeffer, M.D.

10:30-10:45 Break Period

10:45-11:05 Management of Casualties in St. Louis Tornado
Curtis H. Lohr, M.D.

11:05-11:35 Are Full-time Disaster Coordinators Needed in Hospitals?
Yes—Francis C. Jackson, M.D.
No—John N. Hatfield

11:35-12:00 What You Should Know About Chemical and Biological Warfare
Major General Marshall Stubbs, U. S. Army

12:00- 1:30 Luncheon—North Constitution Room

1:45- 2:00 Generating Community Support for a Medical CD Program
Paul A. Slattery, M.D.

2:00- 2:20 Changing Concepts of Disaster Medical Management
Frank F. Schade, M.D.

2:20- 2:40 Getting Public Acceptance of Civil Defense
Bernard F. Hillenbrand

2:40- 3:00 Development and Implementation of Minnesota CD Plan
M. D. Tyson

3:00- 3:20 Disaster Program of Flying Physicians Association
Frank H. Coble, M.D.

3:20- 4:00 Selected Movies

4:00 Adjournment

PARTICIPANTS

Lewis E. Berry, Deputy Director, Office of Civil and Defense Mobilization, Washington, D. C.

E. A. Burkhardt, M.D., Chairman, Special Committee on Civil Defense and Catastrophe, Medical Society of the State of New York, New York.

Frank H. Coble, M.D., Chairman, Disaster Program, Flying Physicians Association, Richmond, Ind.

W. Palmer Dearing, M.D., Director of Health Services, Office of Civil and Defense Mobilization, Washington, D. C.

Henry T. Gannon, Capt., MC, U. S. N., Military Assistant for Planning, Office of Assistant Secretary of Defense (Health and Medical), Washington, D. C.

John N. Hatfield II, Assistant Administrator, Burlington County Hospital, Mount Holly, N. J.

Bernard F. Hillenbrand, Executive Director, National Association of County Officials, Washington, D. C.

Carroll P. Hungate, M.D., Member, Committee on Disaster Medical Care, Council on National Defense, A. M. A.; Member, Council on National Defense, A. M. A., Kansas City, Mo.

Francis C. Jackson, M.D., Member, Committee on Disaster Medical Care, Council on National Defense, A. M. A., Pittsburgh.

Charles L. Leedham, M.D., Director of Education, Frank E. Bunts Educational Institute, Cleveland.

Curtis H. Lohr, M.D., Member, Committee on Civil Defense, Missouri State Medical Association, St. Louis.

Harold C. Lueth, M.D., Chairman, Committee on Disaster Medical Care, Council on National Defense, A. M. A.; Member, Council on National Defense, A. M. A., Evanston, Ill.

William S. Middleton, M.D., Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, Washington, D. C.

Stanley W. Olson, M.D., Dean, Baylor University College of Medicine, Texas Medical Center, Houston, Texas.

George R. Price, Ph.D., Scientist, Writer, and Lecturer, New York.

Honorable Melvin Price, U. S. Congressman, 24th District of Illinois; Member, Committee on Armed Services and Congressional Joint Committee on Atomic Energy, Washington, D. C.

Frank F. Schade, M.D., Chief, Medical and Health Section, Los Angeles County and Cities Civil Defense Planning Board, Los Angeles.

J. E. Segraves, M.D., Director of Disaster Plan, St. Anne's Hospital, Chicago.

Joseph R. Shaeffer, M.D., Chairman, Committee on Disaster Surgery, Committee on Trauma, American College of Surgeons, San Antonio, Texas.

Paul A. Slattery, M.D., Co-Chairman, Disaster Committee, Alameda-Contra Costa County Medical Association, Orinda, Calif.

Carl J. Sprunk, M.D., Chairman, Medical Civil Defense Committee, Wayne County Medical Society, Detroit.

Justin J. Stein, M.D., Chairman, Committee on Military Affairs and Civil Defense, California Medical Association, Los Angeles.

Marshall Stubbs, Major Gen., U. S. Army, Chief Chemical Officer, Department of the Army, Washington, D. C.

M. D. Tyson, Civil Defense Coordinator, Minnesota Department of Health, Minneapolis.

Carruth J. Wagner, M.D., Chief, Division of Health Mobilization, Bureau of State Services, U. S. Public Health Service, Department of Health, Education, and Welfare, Washington, D. C.

Franklin D. Yoder, M.D., Director, Division of Socio-Economic Activities, American Medical Association, Chicago.

MEDICAL NEWS

ARKANSAS

Outbreak of Rabies.—The *Journal of the Arkansas Medical Society* for August reported that Arkansas is experiencing on outbreak of animal rabies. The principal areas involved are 13 counties in southwest Arkansas, south and west of the Ouachita River and about 12 counties in eastern and northeastern Arkansas. In addition, there are scattered cases of animal rabies in other parts of the state. As of May 30, 1959, a total of 130 cases of animal rabies were reported. This is more than twice as many cases for the same period of the previous year. The disease occurred in animals as follows: foxes 68, dogs 43, cattle 11, cats 5, mules 2, and skunk 1. The number of animal bites to people has likewise increased over the previous year. The number, as of May 30, reached a total of 468, as compared with 349 for the same period the previous year. Many of these animal bites occurred in children. The counties which gave completed dog vaccination programs reported 76,997 dogs as being vaccinated against rabies since Jan. 1.

CALIFORNIA

Camera for Three-Dimension Studies.—Stanford Medical School radiologists have installed an improved x-ray motion picture camera in a laboratory in the new medical center on campus. The apparatus films picture studies of the heart in three dimensions. Such studies are possible with the $100,000 device originally installed in the Stanford Hospital located in San Francisco. The project was financed by a grant from the National Heart Institute of the U. S. Public Health Service and by private gifts. A closed circuit television system will be incorporated into the unit for use in the new Stanford Medical Center.

ILLINOIS

Chicago

Celebrate Northwestern Centennial.—A founders day convocation, a medical sciences colloquium, and a centennial dinner will mark the centennial celebration for the faculty of Northwestern University Medical School, Sept. 29 in Thorne Hall, Chicago. Conrad Elvehjem, Ph.D., president, University of Wisconsin, will present "Science and Medicine" at the convocation, at which the following will receive honorary degrees of doctor of science: Dr. Charles Best, Toronto, Ontario; Horace W. Magoun, Ph.D., Los Angeles; Dr. Irvine McQuarrie, Oakland, Calif.; Dr. Joe Vincent Meigs, Boston; Dr. Isidor S. Ravdin, Philadelphia; Dr. William S. Tillett, New York City; Dr. Shields Warren, Boston; and Dr. Elvehjem. Six papers are scheduled for the medical sciences colloquium beginning at 2 p. m. At the evening dinner Horace W. Magoun, Ph.D., will present an address, "Concepts of Brain Function in Northwestern's Century."

KANSAS

Tubercular Mental Patients Go to Topeka.—Tubercular mental patients who had previously been cared for in small units at Osawatomie, Larned, and Topeka State Hospitals will all be treated at Topeka State Hospital in the future, according to a plan recently approved by the State Board of Social Welfare. Dr. Jaime Polit, tuberculosis control physician at the Osawatomie hospital, said the last group of patients from West Pavilion, the tuberculosis unit, left Osawatomie on Aug. 18. In all, eight patients from Osawatomie and 16 from Larned were moved to Topeka. Reports from the three mental institutions indicated a total of 34 patients in tuberculosis isolation in the three hospitals. It was decided that the number of such patients had been reduced sufficiently that their location in one facility was advisable, according to Dr. George W. Jackson, Topeka, director of institutions.

Southwest Clinical Conference.—The 37th annual fall clinical conference of the Kansas City Southwest Clinical Society will be held Oct. 5-8 in Kansas City. The program includes the following guest speakers:

Dr. William Dameshek, Boston; Dr. Richard J. Bing, St. Louis; Dr. Brian B. Blades, Washington, D. C.; Dr. Eugene M. Bricker, St. Louis; Dr. Edward A. Gall, Cincinnati; Dr. Keith S. Henley, Ann Arbor, Mich.; Dr. Richard H. Marshak, New York City; Dr. George G. McHardy, New Orleans; Dr. William T. Moss, Chicago; Dr. Edward S. Orgain, Durham, N. C.; Dr. Oglesby Paul, Chicago; Dr. Charles B. Puestow, Chicago; Dr. Ralph A. Reis, Chicago; Dr. Louis M. Rousselot, New York City; Dr. Harold A. Sofield, Oak Park, Ill.; Dr. Howard S. Van Ordstrand, Cleveland; and Dr. William L. White, Pittsburgh.

Dr. Maurice J. Ryan, president of the society, will open the first general assembly with an address. The Edward Holman Skinner Memorial Lecture, "Auto-Immune Hematologic Disease," will be given

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Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

by Dr. Dameshek. Breakfast seminars, round-table luncheons, symposiums, forums, and technical exhibits are planned.

MARYLAND

General Practice Meeting in Annapolis.—The 11th annual assembly of the Maryland Academy of General Practice will be held at Carvel Hall in Annapolis, Oct. 10-11. The program includes the following papers and speakers:

How to Avoid Professional Liability Claims, Mr. William J. McAuliffe Jr., Chicago.
The Conquest of Toxemia of Pregnancy, Dr. Frank A. Finnerty Jr., Washington, D. C.
Gout in Arthritis, Dr. John H. Talbott, Buffalo, N. Y.
The Use of Hypnosis in General Practice, Dr. Jacob H. Conn, Baltimore.
Freedom from Fear, Dr. Lester L. Coleman, New York City.
The Place of Genetics in General Medicine, Dr. Barton Childs, Baltimore.
New Tests to Aid in the Diagnosis and Management of Disease, Dr. Parker R. Beamer, Indianapolis.
Is the Family Unit Obsolete?, George Devereux, Ph.D., New York City.

The speaker at the annual banquet will be Dr. Fount Richardson, Fayetteville, Ark., president, American Academy of General Practice. The meeting will conclude with a clinical demonstration at the Anne Arundel General Hospital.

MICHIGAN

Dr. Wiley Named Secretary.—On June 24, Dr. Duncan B. Wiley, Utica, was elected as secretary of the Michigan State Medical Society to serve the expired term of the late Dr. L. Fernald Foster. Dr. Arthur E. Schiller, of Detroit, is the new chairman of the society council.

Begin New Headquarters Building.—The Michigan State Medical Society plans to have the expanded facilities of its new modern office building available for use by June, 1960. Situated at Highway M-78 and Abbott Road in East Lansing, the headquarters will have a parking area to accommodate 50 cars. The building has a central lobby two stories high which serves as the hub of the building, with no office more than 40 feet distant. On the first floor are located the offices of the president, editor, business manager, and bookkeeper, and an extra office for future growth. In the west wing are located the stenographers' room and an all-purpose room. The lower level contains workshops and storage rooms for radio transcripts, pamphlets, and the motion picture films from the PR library, and other equipment. The second floor will house the directors' room and a smaller committee room, opposite which the executive director and his assistant will be installed. The public relations library contains research data, periodicals, surveys, visual material for TV or speech presentations, news clippings, and reference works. A part-time librarian will be on hand. Other offices include a public relations council and staff and the secretary of the Medical Care Insurance Committees. A new telephone system is being installed which will have additional lines and will be operated by a modern keyboard console.

NEW JERSEY

Register Radiation Sources.—The New Jersey State Department of Health will begin in late October to register sources of radiation in New Jersey, according to Dr. Roscoe P. Kandle, state commissioner of health and a member of the New Jersey Commission on Radiation Protection. Registration of sources of radiation is required by Chapter 116, Public Laws of 1958. The first step will be the registration of radiation producing machines such as x-ray machines and high voltage rectifiers. This will be followed, later, by registration of radiation-producing materials, such as isotopes. The department will begin by sending a card to members of groups such as physicians, dentists, veterinarians, industrialists, and hospitals, who are known to use radiation-producing machines. Those who return the card indicating they have such machines will be sent the registration document to complete. Chapter 116 is the Radiation Protection Act. It called for creation of the Commission on Radiation Protection in the New Jersey State Department of Health. This nonsalaried Commission was set up and has been working since October, 1958, "to develop reasonable and practical measures to protect the public against injurious radiation."

NEW YORK

Postgraduate Week.—The New York Academy of Medicine will hold its third annual Postgraduate Week (formerly the Graduate Fortnight) Oct. 5-9 under the title, "Research Contributions to Clinical Practice." The program will consist of daily evening lectures, a scientific exhibit, and panel meetings on the following subjects: physiology and therapy of the gastrectomized patient; long-term results of surgery for acquired cardiovascular disease; iatrogenically induced liver disease; fertility and infertility; and problems in hypersensitivity. Although registration is required for nonfellows of the academy, no fee will be charged. For information, write the New York Academy of Medicine, 2 E. 103 St., New York 29.

Personal.—The appointment of Dr. Joseph L. Camp as deputy assistant commissioner in the New York State Department of Mental Hygiene was announced by Dr. Paul H. Hoch, New York City, commissioner of mental hygiene. Dr. Camp, assistant director at Letchworth Village, Thiells, assumed his new post Aug. 13. His duties will include medical inspection functions particularly in the mid-Hudson area.—The appointment of Dr. Bernard T. Brown, Syracuse, as director of the State Out-Patient Chest Clinic in Onondaga County was announced. Dr. Brown has been on the staff of Onondaga Sanatorium since 1942. The sanatorium was transferred to Onondaga County Aug. 27.—Dr. Robert E. Plunkett, Albany, retired Sept. 1 as the New York State Health Department's assistant commissioner for tuberculosis control. Dr. Plunkett had been associated with the State Health Department since 1923 when he was appointed superintendent of clinics and dispensaries. He was assistant commissioner for tuberculosis control since 1947.

New York City

Annual Salmon Lectures.—Curt Paul Richter, Ph.D., professor of psychobiology, Johns Hopkins Medical School, and director of the Psychobiological Laboratory at the Phipps Psychiatric Clinic, Baltimore, will give the 37th series of Thomas William Salmon Lectures at the New York Academy of Medicine on Wednesday afternoon and evening, Dec. 2. His subject will be "Biological Clocks in Medicine and Psychiatry." The afternoon lecture, to be delivered at 4:30 o'clock will be "Periodic Phenomena in Biology" and the evening talk at 8:30 will be "Periodic Phenomena in Medicine and Psychiatry."

Home for Disabled and Aged.—Construction has begun on a model home, the "Functional Home for Easier Living," on the grounds of the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, Dr. George E. Armstrong, director of the center, announced. The one-level house, designed for the physically disabled, heart patients, and the elderly, is being contributed by James Rosati and Sons, builders from St. Petersburg, Fla., and will consist of two bedrooms, living room, dining area, kitchen, bathroom, and carport. All features of interior design are based upon the recommendations of the staff of the Institute of Physical Medicine and Rehabilitation. The kitchen has been planned in cooperation with the Home Bureau of the General Electric Company, which for the past 10 years has been working in research on problems of disabled homemakers in cooperation with the institute's activities of daily living, homemaking, and self help device services. Recommendations for the original model home have been incorporated into a brochure, "A Functional Home for Easier Living." The plan outlined in the brochure and carried out in the house has been developed as the result of 10 years of research with the following goals in mind: (1) to make it possible for a physically handicapped person to have independence in a wheelchair or with the use of a cane or crutches; (2) to make it easier to care for a dependent member of the family in a wheelchair; (3) to allow elderly persons or those with cardiac involvement and other heart problems to function with a minimum of energy. Copies of the brochure may be obtained from the Institute of Physical Medicine and Rehabilitation, 500 E. 34th St., New York 16. Adjacent to the institute, the "Functional Home for Easier Living" will be used as a model for visitors and for the training of disabled homemakers who are patients at the institute.

WISCONSIN

Midwest Rabies Station.—The Communicable Disease Center of the United State Public Health Service has established a Midwest Rabies Investigations Station at Poynette. An official opening for the station was held, with an open house Sept. 23 and a scientific meeting with discussions of the current status of research problems and wild life rabies, Sept. 24. For information, write the Communicable Disease Center, Bureau of State Services, 50 Seventh St., N. E., Atlanta 23, Ga.

Dr. Kempinsky Comes to Milwaukee.—Dr. Warren H. Kempinsky, an assistant professor of neurology at Washington University Medical School, St. Louis, has joined the Marquette University School of Medicine faculty and the medical staff of the Milwaukee County Hospital. Dr. Kempinsky will be a full-time neurologist at the Milwaukee County Hospital and the medical school. He will be in charge of the medical neurology services at the hospital, including the electroencephalography laboratory and will collaborate in further development of neuroradiology. Dr. Kempinsky has been appointed an associate professor of neurology at the School of Medicine.

GENERAL

Centennial of Anatomy Publication.—The American centennial edition of "Gray's Anatomy of the Human Body" was published during the week of Aug. 17. The first edition of Gray was published in this country by Lea & Febiger Publishers in June, 1859. This 27th edition is edited by Dr. Charles Mayo Goss, Louisiana State University School of Medicine, New Orleans, who has edited the two previous editions.

Recreation Congress In Chicago.—The 41st National Recreational Congress will be Sept. 28-Oct. 2 in Chicago with headquarters at the Morrison Hotel, under the theme, "Recreation in an Expanding Leisure." The keynote speech at the opening session will be given by Secretary of Health, Education, and Welfare Arthur S. Flemming. Mr. Homer C. Wadsworth, chairman, President's Citizens Advisory Committee on the Fitness of American Youth will speak at the third general session, presenting "The Role of Recreation in an Affluent Society." A symposium, "Is Recreation Doing Its Job?" is planned the morning of Oct. 2. Workshops, exhibits, and films sessions are arranged. Mr. Joseph Prendergast, executive director of the association, is chairman of the congress policy committee.

Annual Meeting of Anesthesiologists.—The American Society of Anesthesiologists will hold its annual meeting Oct. 4-9, at the Americana Hotel, Bal Harbour, Miami Beach, Fla., with the Florida Society of Anesthesiologists as hosts. Three panel discussions are planned: Medical Aspects of Space Flight; Tradition and Science in Premedication; Rescusitation: Pneumatic, Electronic and Expired Air. Scientific papers will be presented on work completed and work in progress. A program of 17 motion pictures is planned for Oct. 8 and 9. The 10th annual refresher course will be held Oct. 4-6. Scientific and technical exhibits are planned, and a ladies' program is arranged. On the evening of Oct. 6 a luau is planned.

Joint Annual Meeting in Vermont.—The 10th annual joint meeting of the New Hampshire Medical Society and the Vermont State Medical Society will be held Oct. 1-4 at the Equinox House, Manchester-in-the-Mountains, Vermont. The council meeting will be held the evening of Oct. 1, and the House of Delegates will meet the morning of Oct. 2. The theme and speakers for general sessions are as follows:

Oct. 2—Theme: Peptic Ulceration
  Speakers: Dr. Frank E. Harrigan Jr., Manchester; Dr. William R. Waddell, Boston; Dr. Franz J. Ingelfinger, Boston.
Oct. 3—Theme: Cancer
  Speakers: Dr. Roy Korson, Burlington; Dr. John H. Powers, Cooperstown, N. Y.; Dr. David A. Karnofsky, New York.
Oct. 4—Theme: Thyroid Gland
  Speakers: Dr. John B. Stanbury, Boston; Dr. Robert J. Vanderlinde, Hanover.

Sessions October 3 and 4 will be held on "Infections" (with Dr. Robert J. Anderson, Atlanta, Ga., and Dr. Colin C. Stewart, Hanover, as speakers) and "Steroids" (with Dr. David H. Streeten, Ann Arbor, Mich., as speaker). A clinical pathological conference will be moderated by Dr. Robert W. Coon, Burlington, the afternoon of Oct. 2. Prof. Dwight Salmon, of Amherst College, will be the speaker at the Friday night banquet, Oct. 2, speaking on "Latin America." A golf tournament is planned for the afternoon of Oct. 1. For information, write the Vermont State Medical Society, 128 Merchants Row, Rutland, Vt.

Life Expectancy Predictions.—Future gains in the life expectancy of the American people (close to 70 years) are expected to be more modest than those of the last two generations, statisticians of the Metropolitan Life Insurance Company report. By the year 2000, the expectation of life at birth in the U. S. is expected to be just over 74 years. This anticipated gain of less than 5 years contrasts with the 20 years added to the average lifetime between 1900 and 1957, the last year for which complete figures are available. The 1957 figure, 69.3 years, was 0.3 years below the all-time high registered in 1954 and 1956 but was above that for any year prior to 1954. Gains in longevity during recent decades have been greatest at the younger ages, the statisticians state. Since 1900 about 11.5 years have been added to the expectation of life at age 5, contrasted with an increase of 9 years at age 21 and of 5 years at age 40. At age 65, the average remaining lifetime has been extended by only about 2 years. In 1957 the expectation of life at age 65 was 12.7 years for white males and 15.4 for white females; at age 70, the figures were 10.1 and 12.1 years, respectively.

Clinical Scientists Meeting.—The annual meeting of the Association of Clinical Scientists will be held Oct. 10 at the Sheraton Hotel, Washington, D. C., to be preceded by a seminar, "Lipids and Steroids in Clinical Medicine," Oct. 9 and 10 at the Washington Hospital Center. Seminar discussions will cover the following:

- Lipids
  - Total Fats
  - Neutral Fats
  - Total Fatty Acids
  - Unesterified Fatty Acids
  - Cholesterol (free and esters)
  - Phospholipids
  - Lipoproteins
- Steroids
  - 17-Ketosteroids
  - Corticosteroids
  - Aldosterone
  - Estrogens
  - Progesterone

The annual banquet will be Oct. 10. The annual Sunderman Award to "the clinical scientist of the year," will be conferred on Dr. Earl B. Wert, pathologist of the Mobile Infirmary, at Mobile, Alabama. Dr. Wert will deliver an address, "The Training of Medical Technologists." For information, write Robert P. MacFate, Ph.D., 323 Northwood Road, Riverside, Ill., Secretary-Treasurer.

Grants for Pediatric Research.—The awards committee for the Mead Johnson Program for Pediatric Research of the American Academy of Pediatrics announced the availability for the coming year of funds to provide financial aid to young pediatric workers. These funds have been provided each year since 1958 by Mead Johnson & Company under rules established by the academy's awards committee. The maximum amount for any one grant in any year is $3,500. Grant applicants should be young pediatricians who are not more than 10 years beyond the completion of their residency.

These grants are specifically intended to encourage the young, unestablished, research-minded, academic pediatrician. Deadline for receipt of grant applications for July, 1960, will be Jan. 15, 1960. Interested persons should write to American Academy of Pediatrics, 1801 Hinman Ave., Evanston, Ill.

Safety Congress in Chicago.—The 47th National Safety Congress and Exposition will be held in Chicago Oct. 19-23 with headquarters at the Conrad Hilton Hotel. Papers will be presented on subjects concerning accident prevention fundamentals, radiation hazards, material handling, boat safety, air pollution, and other aspects of safety from the viewpoint of industry, the farm, the home, labor, transportation, the school, traffic, youth, and religious activities. At the banquet Oct. 20, 6:30 p.m., Mr. E. J. Thomas, chairman, The Goodyear Tire & Rubber Company, Akron, Ohio, will present an address. The theme for the meeting will be "Safety in the 60's." Safety films will be shown Oct. 21. The American Society of Safety Engineers will meet Oct. 20, and the 14th Annual Federal Safety Conference, sponsored by the Federal Safety Council, will be held Oct. 19-21. Exhibits are planned. For information, write the National Safety Council, 425 N. Michigan Ave., Chicago 11.

Meeting on Pediatrics.—The American Academy of Pediatrics will meet Oct. 5-8 at the Palmer House, Chicago, under the presidency of Dr. James C. Overall, Nashville, Tenn. Seminars, two-day instruction courses of limited enrollment, will be presented Oct. 3 and 4. Round-table discussions, half-day courses of limited enrollment, will run concurrently with the general sessions the afternoon of Oct. 5. The Borden Award Presentation, "The Search for Knowledge of the Child and the Significance of His Growth and Development," will be presented by Dr. Harold C. Stuart, Boston. The general discussions will include the following symposiums and chairmen:

Tranquilizers, Dr. James G. Hughes, Memphis.
Physiology of Respiration and Respiratory Problems, Dr. Charles D. Cook, Boston.
A Report on the Conference on the Role of the Pediatrician in the Prevention of Juvenile Delinquency, Dr. Preston A. McLendon, Washington, D. C.
The Acute Head Injury, Dr. Charles E. Koop, Philadelphia.
Metabolism of Fats, Dr. Laurance W. Kinsell, Oakland, Calif.
Respiratory Distress Syndrome, Dr. William A. Silverman, New York City.

Clinical conferences are planned for Oct. 8 at various hospitals. Section meetings are scheduled. Scientific and industrial exhibits, a program of entertainment, and a program of ladies' activities are arranged. The banquet ($7.50) will be held Oct. 7, 8 p. m. For information write the Executive Office of the Academy, 1801 Hinman Ave., Evanston, Ill.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States, its territories and possessions in the weeks ended as indicated:

	Aug. 29, 1959		Aug. 30 1958
Area	Paralytic Type	Total Cases	Total
New England States			
Maine	1	1	..
New Hampshire	..	..	..
Vermont	..	..	..
Massachusetts	11	15	4
Rhode Island	1	1	..
Connecticut	4	6	2
Middle Atlantic States			
New York	5	12	13
New Jersey	9	19	23
Pennsylvania	4	7	3
East North Central States			
Ohio	9	17	22
Indiana	7	14	18
Illinois	23	35	15
Michigan	6	33	68
Wisconsin	..	1	6
West North Central States			
Minnesota	13	15	2
Iowa	7	19	2
Missouri	10	31	16
North Dakota	..	..	1
South Dakota	..	..	..
Nebraska	2	5	1
Kansas	4	16	3
South Atlantic States			
Delaware	..	..	..
Maryland	2	2	1
District of Columbia	..	..	..
Virginia	18	25	5
West Virginia	13	13	13
North Carolina	9	13	2
South Carolina	5	8	..
Georgia	15	19	3
Florida	5	5	6
East South Central States			
Kentucky	1	1	1
Tennessee	35	47	5
Alabama	22	25	1
Mississippi	5	9	1
West South Central States			
Arkansas	10	15	..
Louisiana	3	6	5
Oklahoma	4	10	..
Texas	13	19	28
Mountain States			
Montana	..	..	1
Idaho	..	..	..
Wyoming	..	..	..
Colorado	..	..	2
New Mexico	1	1	..
Arizona	3	4	3
Utah	2	2	..
Nevada	..	..	1
Pacific States			
Washington	..	15	..
Oregon	15	16	5
California	21	29	4
Alaska	..	2	..
Hawaii	..	..	1
Territories and Possessions			
Puerto Rico	..	..	2
Total	318	533	288

Fellowships for Sight Research.—The National Council to Combat Blindness, Inc., announced that upon the recommendation of its scientific advisory committee, the closing date for receipt of completed applications for "Fight for Sight" full-time research fellowships, grants-in-aid, and summer student fellowships has been designated as Jan. 1, 1960. This change of date was found necessary to facilitate the processing of the increased number of applications being filed with the organization for review by the committee. It will make possible notification in early spring to those applicants for full-time research fellowships where it has been established that this is essential. In such instances, the commencement date for the fellowship may be in advance of Aug. 1, but not prior to May 1. Appropriate forms may be obtained by addressing Secretary, National Council to Combat Blindness, Inc., 41 W. 57th St., New York 19. The National Council to Combat Blindness, Inc., was founded in 1946 with the primary purpose of financing research in ophthalmology and related sciences. The objective of its program is the "ultimate reduction of blinding eye diseases and ocular disorders, through increased basic and clinical research in this field of scientific investigation."

Fellowships for Tuberculosis Study.—The American Trudeau Society, the medical section of the National Tuberculosis Association, provides two types of fellowships to promote the training within this country of clinicians, medical teachers, and investigators in tuberculosis and respiratory diseases: (1) National Tuberculosis Association Fellowships—candidates holding the degrees of M.D., Ph.D., or Sc.D., are eligible for awards making possible continuation of graduate study in the field of respiratory diseases in an approved hospital or medical center. Such studies may be oriented toward either teaching or research. (2) Predoctoral Fellowships—offered to graduate students who hold a bachelor degree and are working on a research project for an advanced degree other than an M.D. Each applicant must have been accepted by the head of the department under whom he expects to work. Awards are determined by individual circumstances and are paid directly to the fellow on a quarterly basis. Fellowships are granted for one year and may begin on any date at the convenience of the applicant. Not more than two renewals will be considered. Fellowship applications must be received by Dec. 1. Edward Livingston Trudeau Fellowships at a higher level of training and award are offered to specially qualified candidates with an M.D. degree who have been assured of a continued teaching or research appointment upon completion of training. Trudeau fellowships are awarded for one year but may be renewed up to a total period of four years. Information concerning fellowships may be obtained from The Director of Medical Education, American Trudeau Society, 1790 Broadway, New York 19.

Armed Forces Institute Seeks Old Instruments.—The Armed Forces Institute of Pathology, Washington, D. C., is seeking military medical material to expand the famous collections of historical items in its Medical Museum which is one of the four major departments of the institute, a national institution jointly sponsored by the Army, the Navy, and the Air Force. The Museum has one of the finest collections of microscopes in the world, displayed to show the evolution of the microscope from its origin through the most recent developments in electron microscopy. Few microscopes have been added to this collection in recent years, and efforts are now being made to fill the gaps, particularly the years from 1920 to the present. The institute will celebrate its hundredth anniversary during and concurrently with the Civil War Centennial. Museum personnel are now planning the exhibits for this occasion. Through the long history of the institute a great number of historical instruments have been assembled, but among this material is very little of Confederate Army origin. Such items particularly are being sought. Although budgetary limitations preclude the purchase of such items, it is believed that there are a great number of instruments or other items which the owners might wish to place in the Museum where they will be carefully preserved for future generations. Any such donations would be greatly appreciated and due credit given. Persons having items they may wish to contribute are requested to write The Director, Armed Forces Institute of Pathology, Washington 25, D. C., relative to their acceptability and shipping instructions.

Smoking Among High School Students.—The American Cancer Society announced results of a new project in Portland, Ore., and surrounding area to study the smoking habits of 21,980 high school students. The study showed that about one-fourth of the boys and more than one-eighth of the girls smoke regularly every week, and most of them smoke every day. The findings are results of a study conducted by a group of researchers headed by Dr. Daniel Horn, director of program evaluation. The one-year study was started in May, 1958, and included students in 11 Portland public schools, 5 Catholic parochial schools, and 5 suburban public high schools in Multnomah and Clackamas counties. Involved were 11,060 boys and 10,920 girls. Results of the study showed:

(1) The percentage of smokers is highest among children of families in which both parents smoke cigarettes; lowest in families in which neither parent has been a smoker, and intermediate in families in which only one parent smokes cigarettes.
(2) The smoking behavior of boys tends to conform more closely to that of the father, while smoking behavior of girls follows more closely that of the mother.
(3) The percentage of smokers among children from families in which one or both parents continue to smoke is significantly higher than the percentage in which one or both parents gave up cigarette smoking.
(4) Each successive school grade has a higher percentage of smokers.
(5) The percentage of smokers is higher among students in Catholic parochial schools than among students in the city public schools. It is lowest among students in the suburban public high schools.
(6) The percentage of smokers among boys who do not participate in athletics is substantially higher than those who do and have a coach. The percentage of smokers is higher among students who do not participate in any school activities.

Personal interviews of a nation-wide sample of 4,000 high school students are also being conducted by an independent youth survey organization as a follow-up of the Portland study. The society board of directors authorized the project "as a means of finding the most effective way of presenting the facts about smoking to teenagers."

Surgeons Meet in Atlantic City.—The 1959 clinical congress of the American College of Surgeons will be held in Atlantic City, N. J., Sept. 28-Oct. 2. More than 1,500 physicians will take part in the program as authors of research papers, lecturers, discussion participants, and teachers. A panel on hospital infections moderated by Dr. Carl W. Walter, Boston, will officially open the meeting, Monday morning, Sept. 28. The 257 research-in-progress reports will be made during the week-long Forum on Fundamental Surgical Problems, under the chairmanship of Dr. Harris B. Shumacker Jr., Indianapolis. Nine postgraduate courses will be given. Principal speaker at the opening session will be Mr. Dean Rusk, president, the Rockefeller Foundation, with Dr. Newell W. Philpott, Montreal, president of the American College of Surgeons, presiding. The future of the college will be discussed in the presidential address Oct. 2 by the incoming president, Dr. Owen H. Wangensteen, Minneapolis. Dr. David P. Cuthbertson, Aberdeen, Scotland, will be guest speaker in an annual lectureship endowed by Baxter Laboratories, of Morton Grove, Ill. "Abdominal Injuries" is the title of the Trauma Oration, to be given by Dr. Rettig A. Griswold, Louisville. Color television of live operations performed at Bellevue Hospital in New York will continue throughout the week. Motion-picture demonstrations of surgical procedures and techniques are planned. Other sessions are a symposium on cancer, under the chairmanship of Dr. Danely P. Slaughter, Chicago; a symposium on graduate training in surgery, led by Dr. Robert M. Zollinger, Columbus, Ohio; and a display of more than 200 scientific and industrial exhibits.

LATIN AMERICA

Slide Seminar in Peru.—From Aug. 3 to 6 the Peruvian Society of Pathological Anatomy held its second slide seminar. The subject was "Tumors of Bones." It was conducted by Dr. David C. Dahline, from The Mayo Clinic, who gave a discussion of the 25 cases. It was attended by 120 pathologists, 24 from other Latin-American countries. The International Academy of Pathology gave support to this meeting in preparing 120 sets of slides. Parallel to the program of the seminar Prof. Isaac Costero, from Mexico, gave a short course on collagen diseases, and a scientific exhibit was prepared by members of the Peruvian Society of Pathological Anatomy. It is the aim of the society to extend to a wider scope among Latin-American pathologists, for attendance at this seminar each year. For information, write the Secretary, Committee of Seminars, Peruvian Society of Pathological Anatomy, Universidad Nacional Mayor de San Marcos de Lima, Facultad de Medicina, Lima, Peru.

FOREIGN

Beirut School Expands Research Program.—The American University of Beirut will strengthen the work of its Medical School in 1960 with the partial support of a grant of $24,000 from the Rockefeller Foundation. To give medical research the status it has in Western colleges as an important complement to teaching, the university is expanding this side of its activities. The size of the medical faculty will be increased, allowing each member greater opportunity for research, and a new building equipped with modern laboratory facilities will be constructed. For 30 years the medical school has pioneered the teaching of medical science in the

Middle East. Throughout its development, the medical school has been supported largely by American philanthropy. The Rockefeller Foundation has contributed some $3,000,000 toward instruction in medical sciences, nursing, and premedical subjects since 1924.

CORRECTION

Hemoglobinuria.—In the article "Hemoglobinuria After Massive Intraperitoneal Hemorrhage" (Aug. 15, pages 1912-1915) at the end of the first paragraph under the subhead Comment (page 1914) the last sentence should read "Intraperitoneal transfusions of citrated blood have been used in infants with satisfactory results.[4]"

EXAMINATIONS AND LICENSURE

MEDICAL SPECIALTY BOARDS

American Board of Anesthesiology: *Written.* Various locations, July 8. Final date for filing application is January 8. *Oral.* Miami Beach, April 25-30. Applications already on file. Sec., Dr. Forrest E. Leffingwell, 217 Farmington Ave., Hartford 5, Conn.

American Board of Dermatology: *Written.* Several Cities, Oct. 5. *Oral.* Oklahoma City, Jan. 15-18, 1960. The final date for filing all applications was July 1, 1959. Sec., Dr. Beatrice M. Kesten, One Haven Ave., New York 32.

American Board of Internal Medicine: *1959 Schedule—Written,* Oct. 19. Final date for filing application was May 1. *Oral.* For candidates on the East Coast, Nov. 6-7, 9-10. Final date for filing application was March 1. *Oral.* Philadelphia, March 11-12. Final date for filing application is January 15. Sec.-Treas., Dr. William A. Werrell, One West Main St., Madison 3, Wis.

American Board of Neurological Surgery: Examination given twice annually, in the spring and fall. In order to be eligible a candidate must have his application filed at least six months before the examination time. New Haven, Nov. 14-16. Sec., Dr. Donald D. Matson, 300 Longwood Ave., Boston, Mass.

American Board of Obstetrics and Gynecology: *Part I, Written.* Chicago, January 16. *Part II, Oral.* Chicago, April 11-16. Final date for filing application was August 1. Sec., Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

American Board of Ophthalmology: *Oral.* St. Louis, Oct. 6-10. *Written.* January 1960 in various cities. Applications for the 1960 written examination must be filed before July 1. *Oral.* 1960, San Francisco, May; Chicago, October. Sec., Dr. Merrill J. King, Box 236, Cape Cottage Branch, Portland, Maine.

American Board of Orthopaedic Surgery: *Part II.* Chicago. Jan. 19-21, 1960. The deadline for the receipt of application was Aug. 15. Sec., Dr. Sam W. Banks, 116 South Michigan Ave., Chicago 3.

American Board of Otolaryngology: *Oral.* Chicago, Oct. 5-9. Final date for filing application was April 1. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City.

American Board of Pathology: New Orleans, Nov. 12-14. Final date for filing application is October 1. Sec., Dr. Edward B. Smith, Indiana University Medical Center, 1100 W. Michigan St., Indianapolis 7.

American Board of Pathology: *Examination in Forensic Pathology.* New Orleans, Nov. 13. Final date for filing application is October 1. Sec., Dr. Edward B. Smith, Indiana University Medical Center, 1100 W. Michigan St., Indianapolis 7.

American Board of Pediatrics: *Oral.* Chicago, Oct. 9-11. *Written.* January 1960. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Physical Medicine and Rehabilitation: *Oral and Written.* New York, June 17-18. Sec., Dr. Earl C. Elkins, Mayo Clinic, Rochester, Minn.

American Board of Plastic Surgery: *Oral and Written.* Miami, Fla., Oct. 15-17. Final date for submitting case reports was July 1. *Oral and Written.* Milwaukee, May 1960. Final date for filing application is January 1. Corresponding Secretary, Mrs. Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8, Mo.

American Board of Psychiatry and Neurology: Chicago, Oct. 19-20; New York, Dec. 14-15; San Francisco, Mar. 14-15, 1960. Training credit for full time psychiatric and/or neurologic assignment in unapproved military programs or services between the dates of Jan. 1, 1950 and Jan. 1, 1954 was terminated on Jan. 1, 1959. Sec., Dr. David A. Boyd, 102-110 Second Ave. S. W., Rochester, Minn.

American Board of Radiology: *Examination.* Washington, Dec. 6-9. Deadline for filing application was July 1. Candidates examined in Diagnostic Roentgenology may expect to be examined in Physics. Obligatory examination in Nuclear Medicine has been postponed until after June 30, 1962 for those candidates being examined in Radiology or Therapeutic Radiology. Until that time the examination in Nuclear Medicine will be optional for those who wish to be examined in Radiology or Therapeutic Radiology. *Examination.* Cincinnati, Spring 1960. Deadline for filing applications is Jan. 1. A special examination in Nuclear Medicine (for those diplomates in Radiology or Therapeutic Radiology) will be offered provided there are sufficient applications. Sec., Dr. H. Dabney Kerr, Kahler Hotel Bldg., Rochester, Minn.

American Board of Surgery: *Written* examinations (Part I) will be held on December 2, 1959 at various centers to be announced later. Closing date for filing applications was August 1. Those completing training requirements after September 30 cannot be considered for the Part I examination in December of the same year. *Oral examinations (Part II):* Baltimore, Oct. 19-20; Cincinnati, Nov. 9-10; Boston, Dec. 14-15; Winston-Salem, No. Car., Jan. 18-19; New York, N. Y., Feb. 15-16; New Orleans, Mar. 14-15; Kansas City, Kans., May 16-17, and Los Angeles, May 19-20. Sec., Dr. John B. Flick, 1617 Pennsylvania Blvd., Philadelphia 3.

American Board of Urology: *Written.* Approximately 25 cities throughout the country, December 4, 1959. *Oral-Clinical* and *Examination in Pathology.* Chicago, February 1960. Final date for filing application was Sept. 1, 1959. Sec., Dr. William Niles Wishard, 30 Westwood Rd., Minneapolis 26, Minn.

DEATHS

Aeilts, Eerko Samuel Ⓜ Sibley, Iowa; Rush Medical College, Chicago, 1915; died in Sioux City June 25, aged 70.

Albano, Joseph, Newark, N. J.; Regia Universita di Napoli Facolta di Medicina e Chirurgia, Italy, 1902; associated with the Columbus Hospital; died in the Monmouth Memorial Hospital in Long Branch July 15, aged 82.

Alderdyce, William W., Toledo, Ohio; Toledo Medical College, 1900; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; past-president of the Toledo Academy of Medicine, of which he was trustee, secretary, and for many years treasurer; associated with the Flower Hospital; died July 3, aged 87.

Allen, Benjamin Gill, Henderson, N. C.; Columbia University College of Physicians and Surgeons, New York City, 1904; veteran of World War I; died in the Maria Parham Hospital July 5, aged 82.

Anderson, Axel Walfried Ⓜ Lakewood, Mich.; Northwestern University Medical School, Chicago, 1905; at one time practiced in Chicago; associated with the Mercy Hospital and the Hackley Hospital in Muskegon, where he died July 2, aged 82.

Bachmann, George William Jr. Ⓜ Honolulu, Hawaii; born in Rochester, N. Y.; Aug. 29, 1914; University of Southern California School of Medicine, Los Angeles, 1941; veteran of World War II and was awarded the Presidential Unit citation and Combat Medical Officers Badge; certified by the National Board of Medical Examiners; specialist certified by the American Board of Anesthesiology; member of the American Society of Anesthesiologists; associated with the Kauikeolani Children's Hospital and the Kapiolani Maternity and Gynecological Hospital; died in St. Francis Hospital July 3, aged 44.

Bennett, Max Ⓜ Attleboro, Mass.; Tufts College Medical School, Boston, 1922; on the staff of the Sturdy Memorial Hospital; past-president of the Attleboro Doctors Club; died July 5, aged 60.

Butler, Patrick Francis Ⓜ Boston; Harvard Medical School, Boston, 1903; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society, of which he was past-president; past-president of the New England Roentgen Ray Society; for many years on the faculty of his alma mater; in 1957 was presented an honorary doctor of science degree from Holy Cross College in Worcester; served on the staff of the Boston City Hospital, where he died June 29, aged 83.

Cantwell, Thomas Olin Ⓜ Harvey, Ill.; Rush Medical College, Chicago, 1935; member of the American Academy of General Practice; died in the Presbyterian–St. Luke's Hospital, Chicago, July 9, aged 60.

Cohen, George Louis Ⓜ Washington, Ill.; St. Louis University School of Medicine, 1928; member of the American Academy of General Practice; veteran of World War II; on the staffs of the Methodist and St. Francis hospitals, and the Proctor Community Hospital in Peoria, where he died July 8, aged 56.

Crews, Charles Hubert, Tampa, Fla.; Barnes Medical College, St. Louis, 1908; formerly practiced in Hammond, Ind.; died July 1, aged 78.

Cumming, Robert Ⓜ McGregor, Texas; L. R. C. P., Edinburgh, L. R. C. S., Edinburgh, and L. R. F. P. S., Glasgow, 1929; certified by the National Board of Medical Examiners; member of the American Academy of General Practice; health officer of McGregor; veteran of World Wars I and II; served on the staffs of the Veterans Administration Hospital and the Hillcrest Hospital in Waco; immediate past-president of the McGregor Rotary Club; died July 6, aged 59.

Dewey, Jay Reed Ⓜ Schaller, Iowa; University of Illinois College of Medicine, Chicago, 1923; past-president of the Sac County Medical Society; past-president of the Iowa division of the American Cancer Society; served on the county board of education and the board of education of Schaller; veteran of World War I; associated with the Loring Hospital in Sac City and the Buena Vista County Hospital in Storm Lake, where he died July 3, aged 68.

Dorsey, Frank Donald, Portland, Maine; Hahnemann Medical College and Hospital of Philadelphia, 1921; member of the staffs of the Maine Medical Center and the Mercy Hospital, where he died July 4, aged 64.

Draper, George Ⓜ New York City; born in New York City May 21, 1880; Columbia University College of Physicians and Surgeons, New York City, 1906; specialist certified by the American Board of Internal Medicine; member of the Association of

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Ⓜ Indicates Member of the American Medical Association.

American Physicians and the American Society for Clinical Investigation; formerly associate professor of clinical medicine at his alma mater; veteran of World War I; served on the staffs of Nassau Hospital in Mineola, N. Y., and the Presbyterian Hospital; in 1947 appointed medical director of the Winifred Masterson Burke Relief Foundation at White Plains, N. Y., retiring in 1950; author of "Acute Poliomyelitis," "Disease and the Man," and "Infantile Paralysis"; died July 11, aged 79.

Duszynski, Leonard Ⓜ Buffalo; University of Buffalo School of Medicine, 1913; died June 12, aged 69.

Ferlita, Americo James Ⓜ Tampa, Fla.; Loyola University School of Medicine, Chicago, 1934; member of the American Academy of General Practice; associated with the Centro Asturiano Hospital and the Tampa General Hospital; died July 2, aged 51.

Fromkin, Charles, Bridgeton, N. J.; Jefferson Medical College of Philadelphia, 1917; died in the Bridgeton Hospital July 6, aged 63.

Garland, James Monroe, Indianapolis; University of Louisville (Ky.) Medical Department, 1910; died July 5, aged 80.

Gillett, Josephine Merle Danforth, North Madison, Ohio; Cleveland Medical College, Homeopathic, 1897; University of Wooster Medical Department, Cleveland, 1903; member of the board of trustees of the Woman's Hospital, Cleveland, where she died June 28, aged 85.

Gutheil, Emilian Arthur Ⓜ New York City; Medizinische Fakultät der Universität, Vienna, Austria, 1930; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; served as secretary of the Association for the Advancement of Psychotherapy; author of "The Handbook of Dream Analysis" and "Language of the Dream"; editor of "Patterns of Psychosexual Infantilism" and "Autobiography: the Life Story of a Pioneer Psychoanalyst"; died in the Mount Sinai Hospital July 7, aged 60.

Hackett, George Clifford Ⓜ Portville, N. Y.; Jefferson Medical College of Philadelphia, 1914; past-president of the Cattaraugus County Medical Society; veteran of World War I; associated with the Olean General Hospital and St. Francis Hospital in Olean, where he died June 22, aged 68.

Hammond, William Thomas, Easton, Md.; Hahnemann Medical College and Hospital of Philadelphia, 1909; specialist certified by the American Board of Radiology; member of the Radiological Society of North America; veteran of World War I; past-president of the Medical and Chirurgical Faculty of Maryland; associated with the Memorial Hospital; died July 10, aged 72.

Harrison, William Barnett Ⓜ Athens, Ga.; Georgetown University School of Medicine, Washington, D. C., 1905; served as assistant director of the division of maternal and child health of the Georgia State Board of Health and regional medical director for both the northeastern and northwestern regions; at one time commissioner of health in Hall County; died July 8, aged 76.

Hessert, Edmund Charles Ⓜ Camden, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1926; specialist certified by the American Board of Obstetrics and Gynecology; fellow of the International College of Surgeons and the American College of Surgeons; professor emeritus of gynecology at his alma mater; associated with Camden County General Hospital in Blackwood and West Jersey Hospital; died in Absecon July 5, aged 57.

Hill, Eugene Scott Ⓜ New York City; University of Nebraska College of Medicine, Omaha, 1932; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; veteran of World War II; formerly practiced in Canton, Ohio, where he was associated with the Mercy Hospital and on the courtesy staff of the Aultman Hospital; director of professional education, American Cancer Society; died in the Regent Hospital in New York City July 3, aged 52.

Hill, Robert Leroy Ⓜ Winfield, Ala.; Memphis (Tenn.) Hospital Medical College, 1905; served as president of the Marion County Medical Association; formerly member of the state legislature; medical director of the Winfield Hospital; president of the Citizens Bank of Winfield; died in the Winfield Hospital July 1, aged 77.

Hollard, Alfred Edward Ⓜ Belding, Mich.; Chicago College of Medicine and Surgery, 1914; for many years health officer; died in the Butterworth Hospital, Grand Rapids, July 1, aged 76.

Hooper, Kendall Ⓜ Flint, Mich.; University of Michigan Medical School, Ann Arbor, 1938; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; veteran of World War II; secretary treasurer of the Flint Academy of Surgery; associated with the McLaren General Hospital, where he died July 1, aged 45.

Horenstein, Perry Samuel Ⓜ Bellport, N. Y.; Harvard Medical School, Boston, 1930; certified by the National Board of Medical Examiners; member of the American Academy of General Practice; past-president of the Sulfolk County Medical Society; physician for the Bellport school system; associated with the Brookhaven Memorial Hospital in Patchogue and the Mather Memorial Hospital in Port Jefferson; died July 13, aged 54.

Ives, Robert Franklin Ⓜ Houston, Texas; Columbia University College of Physicians and Surgeons, New York City, 1895; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; formerly practiced in Brooklyn, where he was associated with the Methodist and Bay Ridge hospitals; died June 30, aged 89.

Jennings, Perry Wells Ⓜ Canton, Mo.; Washington University School of Medicine, St. Louis, 1908; member of the American Academy of General Practice; twice vice-president of the Missouri State Medical Association; for many years secretary of the Lewis-Clark-Scotland Counties Medical Society; for many years on the board of trustees of Culver-Stockton College, where he was physician; charter member and first president of the Canton Kiwanis Club; director of the board that organized the Canton State Bank; physician for the Chicago, Burlington and Quincy Railway System; died July 7, aged 75.

Jillson, Walter Arthur, Palo Alto, Calif.; Boston University School of Medicine, 1905; specialist certified by the American Board of Psychiatry and Neurology, Inc.; fellow of the American Psychiatric Association; veteran of World War I; retired from the Veterans Administration Feb. 28, 1951; at one time superintendent of the Central State Hospital in Lakeland, Ky.; died in the Veterans Administration Hospital, San Francisco, July 8, aged 78.

Jones, Pius Henry, York, Pa.; Baltimore University School of Medicine, 1902; also a graduate in pharmacy; formerly county coroner; died June 30, aged 86.

Kaarboe, Olav Ⓜ Oakland, Calif.; College of Physicians and Surgeons of San Francisco, 1917; veteran of World War II; for many years associated with the St. Francis Hospital; died July 4, aged 72.

Kackley, Ellis Dyson Ⓜ Beaumont, Texas; Starling-Ohio Medical College, Columbus, 1911; veteran of World War I; died in the Hotel Dieu Hospital July 1, aged 76.

Keller, William Lordan Ⓜ Colonel, U. S. Army, retired, Washington, D. C.; born in Connecticut March 24, 1874; Medical College of Virginia, Richmond, 1899; commissioned in the medical corps of the U. S. Army in 1902 while in Manila during the Philippine Insurrection; served at numerous posts in the United States; retired Oct. 31, 1935; as a result of his services in World War I was awarded the Distinguished Service Medal, decorated by the British government and made an officer in the French Legion of Honor; in 1953 was paid a high tribute when an annual lecture series at Walter Reed Army Medical Center was named in his honor; known officially as the William L. Keller Memorial Lecture, the program is presented each year at the Army Surgeon General's meeting; in 1936 a bronze bust of him was installed in the entrance lobby of the main building of the Walter Reed General Hospital, where he served as chief of surgery and lifetime consultant; member of the founders group of the American Board of Surgery; member of the American Surgical Association; fellow of the American College of Surgeons; in 1931 received the honorary degree of doctor of science from his alma mater; died in the Walter Reed Army Hospital July 10, aged 85.

Kelly, Marcus Gerald Ⓜ San Diego, Calif.; St. Louis University School of Medicine, 1932; died in the Sharp Memorial Hospital July 3, aged 52.

Kidd, Ruth Williams Ⓜ Haverford, Pa.; Long Island College of Medicine, Brooklyn, 1941; certified by the National Board of Medical Examiners; served on the staff of the Hospital of St. Barnabas and for Women and Children in Newark, N. J.; died July 2, aged 65.

Larrison, Glen David, Morocco, Ind.; Hering Medical College, Chicago, 1913; veteran of World War I; associated with the Jasper County Hospital in Rensselaer; died near Eagle River, Wis., June 29, aged 70.

Littig, Lawrence Victor Ⓜ Shore Hills, Wis.; State University of Iowa College of Medicine, Iowa City, 1921; specialist certified by the American Board of Radiology; member of the Radiological Society of North America and the American College of Radiology; first president of the Wisconsin Radiology Society; chairman of the Section on Hospitals of the American Medical Association, 1916-1917; veteran of World War I; for many years associated with the Madison General Hospital; served on the staffs of the St. Mary's Ringling Hospital in Baraboo, Fort Atkinson (Wis.) Memorial Hospital, and the Reedsburg (Wis.) Municipal Hospital; died July 6, aged 62.

Livingood, Louis Jacob Ⓜ Wyomissing, Pa.; Jefferson Medical College of Philadelphia, 1917; for many years president of the school board of Womelsdorf; past-president of the Berks County Medical Society; veteran of World War I; associated with the Reading (Pa.) Hospital, where he died July 3, aged 66.

Lovelace, Virgil Andrew, Cape Girardeau, Mo.; Hospital College of Medicine, Louisville, 1904; died in St. Francis Hospital June 11, aged 78.

Maxfield, George Henry Ⓜ Bridgewater, Mass.; Harvard Medical School, Boston, 1903; veteran of World War I; served on the staffs of the Soldiers'

Home in Massachusetts, Chelsea, Boston State Hospital, and the Bridgewater State Hospital; died July 2, aged 83.

Neumann, Conrad A. Ⓜ Winona, Minn.; Northwestern University Medical School, Chicago, 1909; fellow of the American College of Surgeons; associated with the Winona General Hospital; died July 6, aged 77.

Pawling, Philip Sheridan Ⓜ Evanston, Wyo.; St. Louis College of Physicians and Surgeons, 1917; associated with the Wyoming State Hospital, where he died May 27, aged 72.

Pennock, Elmer Lorne Ⓜ Harrison, N. Y.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1912; served as a captain in the medical corps of the Canadian Army during World War I; member of the staffs of St. Agnes Hospital in White Plains, St. Vincent's Hospital in Harrison, and the United Hospital in Port Chester; director of the medical department, Harrison Public School System; for 38 years school physician, and town health officer for 15 years; died in the United Hospital, Port Chester, June 29, aged 75.

Percy, Irving Everett, Chicago; Loyola University School of Medicine, Chicago, 1924; died July 8, aged 60.

Perkins, Charles Norman Ⓜ Burlington, Vt.; University of Vermont College of Medicine, Burlington, 1905; veteran of World War I; alderman for many years; South Burlington health officer; associated with the DeGoesbriand Memorial Hospital and Mary Fletcher Hospital, where he died June 15, aged 79.

Pitt, Cullen Ⓜ Richmond, Va.; University College of Medicine, Richmond, 1905; past-vice-president of the American Student Health Association; for many years physician at the University of Richmond, where he was physician to its athletic association, and where a portrait was presented by the alumni on his retirement; from 1925 until 1956 served as assistant medical director and then as medical director of Atlantic Life Insurance Company; assistant medical director of Mutual Life Insurance Company of Virginia from 1946 to 1956, when he was elected medical director; died July 10, aged 79.

Posey, Gifford O. Ⓜ Tucumcari, N. M.; Southwestern Homeopathic Medical College and Hospital, Louisville, Ky., 1903; formerly practiced in Cimarron, where he served two terms as mayor; died in the Tucumcari General Hospital July 1, aged 81.

Quint, Sumner Joseph, Burbank, Calif.; University of Southern California College of Medicine, Los Angeles, 1899; for many years practiced in Los Angeles; died July 3, aged 87.

Rambo, David T. Ⓜ Ottumwa, Iowa; College of Physicians and Surgeons, Keokuk, 1897; formerly practiced in Chillicothe; associated with Ottumwa and St. Joseph hospitals; died July 3, aged 85.

Raymond, R. O., Phoenix, Ariz.; Washington University School of Medicine, St. Louis, 1899; practiced in Flagstaff; died in St. Joseph's Hospital July 6, aged 82.

Reed, Woodie N. Ⓜ Amory, Miss.; born in Fulton Feb. 2, 1877; Memphis (Tenn.) Hospital Medical College, 1901; past-president of the East Mississippi Medical Society; member of the board of trustees of Amory city schools for two terms; a charter member and past-president of the Amory Kiwanis Club; formerly practiced in Fulton, where he was health officer of Itawamba County; local surgeon for the Frisco Railroad from 1914 to 1928 and also served as division surgeon for the railroad from 1918 until 1952; chief of staff and formerly superintendent of Gilmore Sanitarium; died in the Baptist Memorial Hospital, Memphis, Tenn., June 30, aged 82.

Rosenberg, Louis, Brooklyn; Regia Università degli Studi di Roma. Facoltà di Medicina e Chirurgia, Italy, 1932; associated with the Williamsburg General Hospital; died May 26, aged 56.

Rudulph, Charles Murray Ⓜ Birmingham, Ala.; Medical College of Alabama, Mobile, 1900; veteran of World War I; associated with the South Highlands Infirmary and St. Vincent's Hospital, where he died July 2, aged 79.

Segall, Samuel, Baltimore; Thüringische Landesuniversität Medizinische Fakultät, Jena, Thuringia, Germany, 1930; interned at Mount Pleasant Sanatorium in Reisterstown, Md.; died in Washington, D. C., March 25, aged 55.

Senteff, Louis Henry Ⓜ St. Petersburg, Fla.; Medical College of Alabama, Mobile, 1904; veteran of World War I; member of the American Trudeau Society; served as medical superintendent of the Mount Logan Sanatorium in Chillicothe, Ohio; died in St. Anthony's Hospital July 2, aged 80.

Shultz, Harry M. Ⓜ Logansport, Ind.; Medical College of Indiana, Indianapolis, 1903; veteran of World War I; formerly county health officer; for many years on the medical staff of the Pennsylvania Railroad; served on the staff of St. Joseph Hospital and the Memorial Hospital, where he died June 28, aged 86.

Shumate, David Larkin Ⓜ Kansas City, Mo.; Barnes Medical College, St. Louis, 1896; associated with the Kansas City General Hospital, Research Hospital, and St. Joseph Hospital; died in St. Luke's Hospital July 8, aged 85.

Sidis, Sarah Mandelbaum, Miami Beach, Fla.; Boston University School of Medicine, 1897; formerly practiced in Portsmouth, N. H., where she was medical director of the Sidis Institute; died July 9, aged 85.

Silbert, Samuel Ⓜ New York City; Columbia University College of Physicians and Surgeons, New York City, 1917; veteran of World War I; associated with the Montefiore Hospital, where he was attending surgeon; consulting surgeon in peripheral vascular disease at Mount Sinai Hospital, where he died July 10, aged 65.

Sirken, Charles Ⓜ Jersey City, N. J.; University and Bellevue Hospital Medical College, New York City, 1917; veteran of World War I; secretary of the medical advisory board from 1939 to 1945 and president of the medical board from 1945 to 1947 at the Christ Hospital, where he died July 4, aged 65.

Sophian, Lawrence Henry Ⓜ Medical Director, U. S. Public Health Service, retired, New York City; born in New York City June 26, 1903; Harvard Medical School, Boston, 1925; joined the teaching staff of his alma mater as an instructor in pathology; left this post in 1929 to assume the position of associate professor of pathology at the New York Post-Graduate Medical School; in 1930 appointed [illegible] at Roosevelt Hospital, where he [illegible]tering the U. S. Public Health Service in 1939; served at the U. S. Marine Hospital, Staten Island, N. Y., as director of laboratories and research; later was promoted to medical director of the U. S. Public Health Service and retired in 1952 with the rank of captain; specialist certified by the American Board of Pathology; member of the American Association of Pathologists and Bacteriologists and the College of American Pathologists; at one time member of the medical department of Lederle Laboratories; medical director and vice-president of William Douglas McAdams, Inc., a pharmaceutical advertising agency; joint author of "The Sulfapyrimidines"; died in the Roosevelt Hospital July 8, aged 56.

Sphar, Robert Argyle Ⓜ Brownsville, Pa.; Medico-Chirurgical College of Philadelphia, 1910; associated with the Brownsville General Hospital; died in the Presbyterian Hospital, Pittsburgh, July 2, aged 78.

Staats, James Clinton Ⓜ California, Ky.; Eclectic Medical College, Cincinnati, 1917; formerly practiced in Cincinnati, where he was associated with the Deaconess Hospital; died in St. Luke Hospital of Campbell County, Fort Thomas, July 1, aged 67.

Stewart, Ernest Richard Vernon Ⓜ Cincinnati; Eclectic Medical College, Cincinnati, 1924; associated with Our Lady of Mercy Hospital in Mariemont, Ohio, Speers Memorial Hospital in Dayton, Ky., St. Elizabeth Hospital in Covington, Ky., and Bethesda Hospital in Cincinnati; died near Marathon July 5, aged 70.

Stone, Abraham Ⓜ New York City; born in Russia Oct. 31, 1890; University and Bellevue Hospital Medical College, New York City, 1912; served as associate clinical professor of preventive medicine at his alma mater and as a faculty member of the New School for Social Research; from 1923 to 1927 instructor in urology at the New York Post-Graduate Medical School; veteran of World War I; fellow of the American Society for the Study of Sterility and the New York Academy of Medicine; since 1941 director of the Margaret Sanger Research Center; founder and president of the American Association of Marriage Counselors and vice-president of the Planned Parenthood Federation of America; in 1947, at the request of the State Department, was appointed by the National Research Council as delegate to the first World Conference on Family and Population at Paris; in 1951 the World Health Organization of the United Nations named him a special consultant on family planning in India and Ceylon; in 1947 received the Albert and Mary Lasker award for his work in planned parenthood; consultant in urology at the Sydenham Hospital; joint author of "A Marriage Manual," "Planned Parenthood," and "Premarital Consultation"; editor of the *Journal of Human Fertility* from 1936 to 1949; died in New York Hospital July 3, aged 68.

Tolstoouhov, Alexander Vladimir, New York City; Russian University of Warsaw Faculty of Medicine, 1920; died in St. Luke's Hospital July 9, aged 70.

Truscott, Joseph Robert, Binford, N. D.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1901; president of the school board; for services during World Wars I and II received presidential citations; died in Northwood June 27, aged 88.

Venus, Charles Henry, York, Pa.; Baltimore Medical College, 1902; died July 5, aged 87.

Wanlass, Stanley Adrian Ⓜ Harrison, N. Y.; George Washington University School of Medicine, Washington, D. C., 1923; veteran of World War I; honorary police surgeon and served as school doctor at Harrison Avenue School; associated with the United Hospital in Port Chester; vice-president of the Rye (N. Y.) National Bank; died in Rye July 12, aged 66.

Weidman, David Henry, Buffalo; University of Buffalo School of Medicine, 1932; associated with the Deaconess Hospital; died July 1, aged 51.

FOREIGN LETTERS

AUSTRIA

New Orally Given Diuretic Agent.—At the meeting of the Society of Physicians in Vienna on May 29, H. Schnack and F. Wewalka compared the results obtained with hydrochlorothiazide, an orally administered diuretic agent, with those obtained when chlorothiazide was used. For the former a small dose (25 to 150 mg.) was effective and a slight blocking of carbonic anhydrase, manifested by a decreased potassium excretion, was noted. The effect continued for 24 to 48 hours with adequate doses. Although removal of edematous fluid in cardiac patients was prompt, no diuresis was produced in patients with cirrhosis of the liver. This difficulty was overcome by doubling the dose or by combination with agents which released carbonic anhydrase. Not even mild psychic changes were ever observed in any of a series of 31 patients with cirrhosis of the liver. The drug was well tolerated and it could be given in small maintenance doses over a prolonged period.

Perphenazine for Psychoses.—At the same meeting, E. Frühmann and H. Gross reported that they had treated 150 psychotic patients with perphenazine. The effect of the drug is similar to that of chlorpromazine. Relief of anxiety and decreased aggression, motor unrest, and impairment of thinking was observed. In addition to the rapid production of sedation, the disappearance of hallucinations and the prompt dissolution of the manic mood were remarkable. As a result of this treatment a much earlier institution of psychotherapy and occupational therapy was possible. In patients with melancholia and endogenous depression the anxiety and excitability were improved but because the depression was greatly increased the drug is contraindicated in such patients. Epilepsy presents an absolute contraindication. The dosage must be determined individually, since the unpleasant side-effects depend chiefly on the patient's constitution and general condition.

Treatment usually started with the intramuscular administration of 5 mg. of the drug three times daily for three days followed by the oral administration of 8 mg. four times a day. In some patients doses up to 80 mg. might be given parenterally. Because of the undesirable side-effects, the speaker recommended simultaneous administration of an antiparkinsonian agent starting with the institution of treatment. Threatening side-effects may be combated with thenalidine and caffeine. Life-threatening conditions of this type were observed in only one patient. The effect of perphenazine ranged between that of chlorpromazine and that of reserpine, but perphenazine seems to be superior to these two drugs because of its effect on the schizophrenic process.

BRAZIL

Surgical Infections.—Dr. J. G. Ramos (*Revista Brasileira de Cirurgia,* May, 1959) studied a series of 110 "clean" surgical operations. There was no indication that the use of antibiotics under such circumstances prevented complications or reduced the number of postoperative days in hospital. On the contrary, their prophylactic use engendered a false sense of security and gave rise to an increase of postoperative complications through relaxation of the rigid rules of asepsis. In the same issue Drs. Fernando Paulino and A. C. Neto compared a series of 100 patients subjected to various operations without the prophylactic use of antibiotics with other groups of such patients to whom antibiotics were given routinely. They concluded that antibiotics should be given only when definitely indicated.

Wounds of the Hands.—Dr. L. B. Abreu of São Paulo (*Revista do Hospital das clínicas,* vol. 14, May-June, 1959) pointed out the importance of early treatment of wounds of the hand. Primary repair of nerves and tendons is the ideal treatment, but this should not be attempted unless (1) the wound is fresh and clean, (2) the surgeon and assistant are thoroughly familiar with the anatomy of the hand and have mastered atraumatic technique, (3) a fully equipped operating room is available, (4) the patient is prepared to undergo a long operation under general anesthesia, and (5) he can be closely watched in the first two postoperative days. If these conditions cannot be observed, it is safer to cleanse the wound, perform a débridement, and suture the skin. Secondary repair three to four weeks later will still give these patients excellent results.

Chloroquine for Mycoses.—Dr. N. Belliboni reported to a meeting of the Associação Paulista de Medicina that he had treated a patient who had sporotrichosis with chloroquine and obtained com-

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The items in these letters are contributed by regular correspondents in the various foreign countries.

plete regression of the nodular and lymphangitic lesions in a little more than 20 days. He treated other patients who had sporotrichosis with this drug. Although an in vitro test had shown that the drug did not inhibit the growth of Sporotrichum and Paracoccidioides, these other patients also showed marked improvement. The speaker then used the same drug to treat blastomycosis, chromomycosis, and actinomycosis, but in these patients so treated for 30 to 60 days, the results were inconclusive. He had the impression that a patient with lupoid blastomycosis improved slightly, but when the treatment was stopped the initial condition returned. In this patient oral administration of the drug caused a severe gastritis so the drug was given parenterally. The author believed that the good results of the use of chloroquine in sporotrichosis, in spite of the inactivity observed in vitro, could be due to the transformation of the drug in the liver, where it might be split into chemical compounds of an unknown nature, which could be responsible for the curative action.

Teratomatous Ovarian Chorioepithelioma.—Dr. Paulo Torres, of the University of Juiz de Fora (*Rev. ginec. e obst.* 53:385, 1959) reported a case of teratomatous chorioepithelioma of the ovaries in a girl 7 years of age. Chorioepithelioma is a rare tumor and its teratomatous variety is independent of any previous pregnancy. The history of the patient was that she had had an accelerated physical development in the three months prior to admission, mainly in the external genitalia, with normal menstrual periods, asthenia, fever, and a painful swelling of the abdomen. She had the aspect of an adolescent girl, with pubic and axillary hairs and breasts well developed, large labia majora, and cornification of the vaginal epithelium. The swelling in the low abdomen was as large as a pregnant uterus in the fifth month. The more important laboratory findings were positive Galli Mainini test results, increased excretion of urinary gonadotropins and estrogens as well as pregnanediol and 17-ketosteroids. Vaginal cytology showed hyperestrogenic changes.

The hypothesis of pregnancy having been ruled out, a tentative diagnosis of chorioepithelioma was made, and the patient was operated on 19 days after admission. A huge tumor mass was found involving the ovaries and tubes in continuity with the external surface of the uterus. Other small tumors were found on the parietal peritoneum and intestinal loops. These tumors were polypoid, soft, and had a dark red color similar to that of placental tissue. Microscopic examination confirmed the presence of a chorioepithelioma by showing atypical placental trophoblasts (mainly Langhans' cells), areas of necrosis, hemorrhage, hyperemia, vascular proliferation, and a few embryonal structures. There was no invasion of the uterine deep layers or endometrial glandular hyperplasia, decidual transformation of the chorionic cells, nor muscular hypertrophy. This case was of interest because of the rarity of the condition and the positive histological diagnosis.

DENMARK

Posture in Boys.—Asmussen and Heebøll-Nielsen (*Acta orthop. scandinav.* 28:174-189, 1959) studied 201 schoolboys, aged 7 to 16 years, to determine whether there was a correlation between the form and function of the back and to see how these factors change during the school years. It has been postulated that school life with its compulsory sedentary work caused deterioration of the backs of children, even though gymnastics and other forms of physical education were thought to compensate for it. The subjects all took part in compulsory physical exercises three or four hours a week. It was found that lumbar lordosis increased but kyphosis and pelvic inclination decreased with increasing body weight. Flexibility of the spine seemed to increase with height in forward flexion and to remain constant in backward flexion. A tendency to a positive correlation between lumbar lordosis, kyphosis, pelvic inclination, muscular strength, and flexibility of the spine was also found. The authors concluded that a strong and flexible back most often also had more pronounced curves and vice versa. The normal range of degrees of curvatures was large (plus or minus 25% of the mean). Any attempt to "straighten" a curved but otherwise normal back by exercises or training consequently should be discouraged and most probably would fail by itself.

Side-effects from Isoniazid and PAS.—Olsen and Tørning (*Acta tuberc. scandinav.* 37:89-103, 1959) studied a series of 52 ambulatory tuberculous patients, most of whom had continued treatment with isoniazid and PAS after leaving the hospital. The total duration of chemotherapy was at least one year, except in one patient. Twenty-eight patients had psychological side-effects which in 18 were ascribed to isoniazid, and in 10 probably to other contributory causes. The symptoms were fatigue, impairment of concentration and memory, depression, and unbalanced state of mind. They usually became obvious within the first months of ambulatory treatment even in those patients who started with a fairly long treatment in the hospital. In most patients the symptoms continued for the duration of ambulatory treatment but disappeared within one or two months after discontinuance of treatment. The frequency of manifest psychological side-effects presumably was much higher in this series of private patients than the average, but the observations reported here justify a stronger interest in these symptoms than had hitherto been shown. The author made a plea for caution in the large-scale use of isoniazid as prophylactic therapy in healthy persons.

Ulnar Perineuritis.—Progressive arthrogenous paralysis of the ulnar nerve arises by mechanical action on the nerve where it passes the elbow joint. This mechanical action on the nerve may be due to deformity of the joint after a fracture and the paralysis then appears after a latent period which may be several years. The paralysis may also arise in connection with an arthrotically deformed elbow joint, habitually increased cubitus valgus of the elbow joint, and chronic external trauma. In order to eliminate the detrimental action on the nerve, operation is indicated in most patients.

Erik Jensen (*Acta psychiat. et neurol. scandinav.* 34:205-221, 1959) operated on a series of 40 such patients. In 39 an anterior transposition of the ulnar nerve was performed and in one a bursa was removed from the ulnar groove. At a follow-up examination of 39 of the patients 1¾ to 9½ years after the operation, it was found that in one patient the condition was slightly aggravated, in 2 it was unchanged, in 6 it was slightly improved, in 18 it was much improved, and in 12 it was cured. The author concluded that the slighter the paralysis and the shorter its duration the greater was the chance of full restitution by operation. Patients with incipient paralysis of the ulnar nerve thus ought to be subjected to operation as soon as possible.

Chlorpropamide.—Chlorpropamide is a hypoglycemic compound that differs chemically from tolbutamide only insofar as Cl is substituted for CH_3 in the para-position. V. Esmann and co-workers (*Acta med. scandinav.* 164:73-79, 1959) studied the clinical effect of chlorpropamide in 20 diabetic patients whose ages ranged from 41 to 85 years. Diabetes was newly diagnosed in five patients. The duration of the disease was less than 5 years in six patients, between 6 and 10 years in four patients, and more than 11 years in five patients. Six patients had diabetic retinopathy. Chlorpropamide was found to be effective and well tolerated by 14 of the patients when given in a dosage of 0.5 Gm. per day. One patient even did well on a dosage of 0.25 Gm. daily. When more than 0.5 Gm. was given daily mild hypoglycemic reactions were occasionally observed.

The treatment was stopped in two patients who developed fever and a rash. In one of them the treatment was resumed later without reappearance of fever or skin manifestations. None of the patients complained of nausea. Three patients complained of alcohol sensitivity with a flushing reaction similar to that following the use of disulfiram. The study of kidney function, liver function, and the hematological status revealed no changes during the four-week period. The elimination of chlorpropamide from the body was slow. The biological half-life in the serum is about two days. Chlorpropamide caused an increase in intravenous dextrose tolerance and a slight decrease in inorganic phosphate and potassium levels.

Fibrinolysin in Thrombotic Diseases.—Jørgen Røjel (*Acta med. scandinav.* 164:81-93, 1959) stated that until now fibrinolysin activity has been determinable only by methods too complicated for use in clinical routine. He devised a simple method based on the observation by Hagedorn that serum possesses certain protamine-splitting properties. Brunfeldt and Poulsen found this protamine-splitting property to be due to fibrinolysin as the effect became accelerated by addition of streptokinase and inhibited by addition of ionized zinc. Addition of lysine ethyl ester would inhibit the protamine-insulin-splitting property of serum because of its specific inhibiting effect on fibrinolysin.

In the present study the author determined the streptokinase activity and the spontaneous fibrinolysin activity in serums from patients with thrombotic disturbances and from normal subjects, the fibrolysin activity being expressed by the half-life, i. e., the time required by a serum to reduce by 50% the turbidity of the solution. In serums from normal subjects the activated half-life was found to be 5.31 minutes and the spontaneous half-life was found to be 2.12 minutes. In serums from patients with thrombotic disturbances the activated half-life was 12.18 minutes and the spontaneous half-life was 2.39 minutes. Comparison of these two groups showed a much lower fibrinolysin activity in serums from patients with thrombotic disturbances than in those from normal subjects. Moreover the investigation demonstrated the remarkable fluctuation of the fibrinolysin activity throughout the course of the thrombotic disturbance and usually this activity would be found to be low coincidentally with the onset of an aggravation in the clinical condition.

With a view to precluding the possibility of anticoagulant treatment by heparin from influencing the fibrinolysin activity, one patient with a physiological disease was treated with anticoagulant drugs. Throughout the treatment his fibrinolysin activity remained normal. In patients in whom infarction could not be diagnosed on the basis of clinical and electrocardiographic findings the author suggested that the fibrinolysin analysis might be of use. In one patient with a mesenteric thrombosis a reduced fibrinolysin activity was recognized and hence the diagnosis could be made before operation. In another patient the fibrinolysin activity remained low for nine days after the leg had been amputated. This feature might be explained on the principle that the fibrinolysin combined with such fibrin as formed in the wound secretion. Gradually as the secretion from the wound subsided the fibrinolysin values became normal.

Bowel Function in the Puerperium.—Bach and Ingerslev (*Acta obst. et gynec. scandinav.* 38:88-92, 1959) investigated the bowel function in 411 puerperal women. Of the patients who were allowed out of bed on the first postpartum day 40% had a spontaneous bowel movement daily after the reestablishment of bowel function as compared with 30% of those not allowed out of bed until the fourth postpartum day. Spontaneous bowel movement occurred in 60% of the patients before the sixth postpartum day. The patients allowed out of bed on the first postpartum day had a spontaneous bowel movement earlier than those allowed out of bed on the fourth postpartum day. The authors concluded that routine treatment with cathartics during the puerperium was not justified. If help is needed the authors recommended the use of suppositories and if these do not produce the desired effect magnesium sulfate should be given.

Quantitative Determination of Gonadotropins.—S. G. Johnsen (*Acta endocrinol.* 31:209-227, 1959) determined quantitatively the amount of hypophysial gonadotropins in 24-hour urine specimens in 295 normal subjects (118 men aged 25 to 96 years, 38 women aged 18 to 49, 64 women aged 51 to 87, and 75 children aged 9 to 15). In the men the excretion of gonadotropins rose continuously with age starting in the early 30's. At the age of 70 the mean value was about twice as high (58 units) as in young men (30 units). The level of values in men was far from the level of values reached by postmenopausal women. The mean value of 20 units in the younger and regularly menstruating women was lower than in the young men and was independent of age so long as regular menstruation was present. As regarded the influence of the menstrual cycle on the excretion of gonadotropins, 12 women had a sudden rise in gonadotropin excretion in the middle of the cycle. Before and after this rise the level was about the same. In the older and postmenopausal women the climacteric caused a tenfold rise in the values from that of the childbearing age. The mean value in the group 50 to 64 years of age was 210 units.

In the children it was found that for the boys the gonadotropin excretion was somewhat lower than in men, with an average of 14 units, and in girls the excretion was on the average almost the same as in women. The author concluded that the normal values for the excretion of hypophysial gonadotropins in urine varied with age and sex. Commenting on the so-called male climacteric he stated that the testicular steroid production showed a slow steady decrease starting in the 30's but never completely ceased within the normal lifespan. A sudden gonadal change comparable to the menopause in women does not occur, as a state of castration is not reached, and it is therefore meaningless to speak of a male climacteric.

Chlorothiazide as a Diuretic.—Tage Hilden and coworkers (*Nord. med.* 61:717-719 [May] 1959) gave 57 patients who had edema chlorothiazide as a diuretic in 72 periods of treatment of 5 days' duration and in 24-hour doses of 1 or 2 Gm. The drug was an effective diuretic. An increase of the 24-hour dose from 1 to 2 Gm. caused only a slight increase in the diuretic effect. Generally chlorothiazide produced only minor alterations in the plasma levels of chloride, sodium, and bicarbonate ions. The most essential electrolytic change was a fall in the plasma potassium level. Pathologically low values appeared in six patients. No correlation was observed between the fall in the serum potassium level and a change in weight. A marked fall in the serum potassium level could be seen when the diuretic effect was only slight or failed to appear. Practically no immediate side-effects were seen. One patient developed an eruption of the skin. The kidney function estimated from the serum creatinine level remained uninfluenced except in one patient with thrombosis of a renal vein.

Renal Damage due to Acetophenetidin.—Larsen and Møller (*Acta med. scandinav.* 164:53-71, 1959) questioned 698 patients over 20 years of age admitted to the department of medicine of the County and Municipal Hospital of Vejle and found that 205 or 29.4% took acetophenetidin-containing drugs daily and 156 or 22.3% took them occasionally; 98 patients, or 14%, had taken the drug daily for six years or longer. Twice as many women as men took acetophenetidin daily and the women tended to take larger doses and to continue for longer periods than the men. The renal function was found to be reduced in 68 (33.2%) of the 205 patients who took the drug daily. This finding differed significantly from the findings of reduced renal function in 29 (8.6%) of 337 patients who did not take acetophenetidin and 17 (10.9%) of 156 patients who used it occasionally.

This incidence of reduced renal function was found to increase with the intensity of the dosage and the duration of administration. These findings were regarded as definite proof that acetophenetidin had an injurious effect on the kidneys. Of 21 patients whose total consumption of the drug was 7 kg. or more, 17 had reduced renal function, and these results uniformly indicated a renal lesion characterized by reduced ability to concentrate and reduced filtration. Hypertension, retinopathy, or edema were not encountered. Infections of the urinary tracts were frequent but did not occur until acetophenetidin had been used for many years and must be regarded as secondary. Because prolonged use of this drug in large doses indicates genuine drug addiction, preparations containing it should not be obtainable without a prescription.

FINLAND

Skin Arthroplasty.—K. O. Kettunen (*Acta orthop. scandinav.* 28:190-197, 1959) used skin graft arthroplasty in 122 operations on different joints. In connection with later arthrotomies performed on two such joints tissue samples were examined microscopically. These samples revealed cartilaginous metaplasia. These specimens showed no signs of intra-articular irritation. The epidermal cells had become destroyed and no epidermal cysts had formed. The necessary condition for the metaplastic process was articular weight-bearing. In one patient in whom the ulnar joint surface was not covered with a skin graft, the granulation tissue growing from the joint surface retained its vitality and underwent a metaplastic development into cartilage. It therefore seemed evident that, if the articular cartilage was removed from both articular surfaces, investing only one of the articular surfaces with interposition material was sufficient. Histochemical increase of acid mucopolysaccharides in the ground substance of connective tissue was noted. The new cartilage was of either fibrous or hyaline type. The author concluded that the human organism tolerates a full-thickness skin graft used as interposition material well. The epidermis of the skin graft becomes destroyed and no epithelial cysts form. In the connective tissue used as interposition material a metaplastic development into cartilage takes place when this tissue is subject to joint function.

Normal Distribution of Pulmonary Function Between the Lungs.—The mean ratio of the functions of the two lungs and the physiological variation are not only of theoretical interest but also of practical significance for evaluation of the results of bronchospirometry. V. Autio (*Ann. med. int. Fenniae* 48:9-13, 1959) studied the results of bronchospirometry in 22 healthy volunteers, 5 men and 17 women, their mean age being 24.8 years, none of whom had any history of pulmonary disease. Since for various reasons the ratio of the vital capacities of the lungs can be considered the most reliable measure of the differential function, the mean ratio of the functional capacities of the right and left lungs could be taken to be 53:47 ± 5%. Thus if the total vital capacity of a subject were 5,000 cc., the vital capacity of the right lung could vary between 2,400 and 2,900 cc. and still be normal.

Phenethyldiguanide for Diabetes.—M. Reinikainen (*Ann. med. int. Fenniae* 48:25-35, 1959) studied the effect of phenethyldiguanide (DBI) on 15 diabetics aged 26 to 79 years (average 60) who had used carbutamide or tolbutamide previously but whose blood sugar level had remained over 200 mg. per 100 ml. in spite of these drugs. Most of the patients also complained of fatigue and thirst. Of these patients eight had taken carbutamide or tolbutamide for a year or longer. DBI lowered the blood sugar level in nine patients. In three of these the drug caused nausea and vomiting and in one it caused diarrhea. In the youngest patients acidosis was present throughout the sulfonylurea treatment and did not disappear during DBI therapy, although doses of 200 mg. lowered the blood sugar level effectively. Vomiting necessitated discontinuation of the treatment. There were no side-effects in the remaining six patients in whom the blood sugar level fell in response to treatment with DBI. In four of these the urine also became free from sugar. The author concluded that the fact that DBI produced a pronounced fall in blood sugar level in 9 of 15 patients was significant especially since none of them had responded satisfactorily to sulfonylurea therapy.

Acute Bacterial Meningitis.—Most patients treated for acute bacterial meningitis are infants and young children. Only occasionally is the adult population affected. Kauhtio and Jansson (*Ann. med. int. Fenniae* 48:33-43, 1959) reported a series of 95 patients over 15 years of age who were treated for acute bacterial meningitis. In the years 1937 to 1946 Neisseria meningitis accounted for 60% of the cases but from 1947 to 1956 Streptococcus pneumoniae predominated, accounting for 63% of the cases. Meningococcic meningitis tended to affect adolescents and persons under 40 years of age whereas 67% of the patients with pneumococcic meningitis were over 40. The disappearance of meningococcic meningitis with only three verified cases observed since 1945 might be explained by the increasing use of various antibiotics in treating almost every febrile illness. The mortality was 9% during the early years. In patients with pneumococcic meningitis treated with penicillin the mortality was 13%. Intrathecal administration of antibiotics seemed unnecessary. Meningitis caused by bacteria other than the two mentioned was rare. There were only seven such patients in the 20-year observation period. Four of these recovered.

For the patients showing meningeal signs and symptoms and often presenting diagnostic and therapeutic problems, the authors recommended examination of a direct smear of the spinal fluid. When no bacteria are found but the cell count is in the hundreds antibiotics should not be given unless there are some other indications and the spinal puncture should be repeated the next day. In patients with serous meningitis the cells are predominantly, if not exclusively, lymphocytes, whereas in untreated bacterial meningitis the polymorphonuclear cells predominate, the sugar concentration usually decreases, and the general condition of the patient deteriorates. By this time there also will be some bacterial growth in the culture of the spinal fluid obtained by the first puncture. The authors concluded that an early bacteriological diagnosis was of great importance when selecting appropriate treatment. The administration of several antibiotics and sulfonamides simultaneously as a routine measure could not be recommended. In some patients purely supportive measures, if applied early, might be lifesaving.

Theophylline Sodium Glycinate.—Oral administration of theophylline and many of its derivatives which have a low solubility in water often causes gastrointestinal irritation. Therapeutic plasma levels cannot therefore always be attained. One of the new theophylline derivatives, theophylline sodium glycinate, readily soluble in water is now available. Seppälä and Kärkelä (*Ann. med. exper. et biol. Fenniae* 37:59-62, 1959) attempted to determine whether therapeutic plasma levels of theophylline could be attained by oral administration of theophylline sodium glycinate to 13 hospital patients in good condition and without any gastrointestinal disease. Every subject received a single dose of 0.9 Gm. of theophylline sodium glycinate (equivalent to 0.45 Gm. of theophylline). The therapeutic plasma level above 1 mg. per 100 ml. was reached in all 13 subjects usually after one or two hours. In eight subjects the theophylline plasma level after five hours was still above 1 mg. per 100 ml. The trial dose did not cause gastrointestinal irritation or other side-effects in any of the subjects. The authors, however, concluded that the therapeutic value of theophylline sodium glycinate depended on the frequency of side-effects in maintenance treatment.

Systemic Lupus Erythematosus.—T. Vartio (*Ann. med. exper. et biol. Fenniae* 37:86-88, 1959) used the simple precipitation test for systemic lupus erythematosus, introduced by Jones and Thompson, on 98 patients with various disorders. Of 10 patients with systemic lupus erythematosus the test was positive in 3. In one untreated patient the test was negative but after two weeks it became positive. In another patient treated for six months with cortisone, ACTH, and chloroquine, the test was negative, but after a month it became positive. The results obtained were similar to those previously obtained. The test cannot be considered specific for systemic lupus erythematosus.

Rheumatoid Arthritis.—Laine and Julkunen (*Ann. med. exper. et biol. Fenniae* 37:100-104, 1959) studied the bentonite flocculation test (BFT) in 100 adults (86 women and 14 men) with rheumatoid arthritis. The BFT was positive in 64% which was less than expected in view of previous investigations. There was no correlation between the BFT and the sedimentation rate. The duration of the disease did not seem to affect the incidence of the positive reaction.

Infrared Spectroscopy in Chemical Identification.—Infrared spectroscopy is the best and most rapid method for the identification of pure organic compounds when the spectrums of these compounds are available. Alha and Tamminem (*Ann. med. exper. et biol. Fenniae* 37:157-174, 1959) reported that since 1957 the Institute of Forensic Medicine of the University of Helsinki has been equipped with an infrared spectroscope with attached microscope. Thirty-one cases of suspected fatal poisoning were investigated in which the identification of the separated substances and the exclusion of suspected substances was made mainly by infrared spectroscopy. The materials investigated were specimens of body organs removed at autopsy and medicines that had been taken by the dead person. In the separation of volatile substances one of the techniques used was steam distillation after precipitation with acetone. Nonvolatile substances were separated with acetone and the crude product obtained was fractionated into four groups.

In the group of acid and neutral substances "water purification" was used and when necessary the separation of neutral substances and fractionation of acid substances into two groups was done. The further treatment of the fatty mass obtained by acetone treatment was performed in two cases in which carbromal and methion (Mesantoin) were separated. Further procedures of purification and separation were sublimation, ion exchange, and chromatography on silica gel. The latter allowed the separation of pentobarbital and carbromal and of pentobarbital and bromisovalum. With use of the infrared spectrums the following substances separated from cadaverous materials were identified: trichloroethylene, parathion, p-nitrophenol, DDT, Systox (an insecticide), acetophenetidin, bemegride, meprobamate, tertiary amyl isovalerate, methoin, bromisovalum, carbromal, sedormid, butabarbital, phenobarbital, pentobarbital, barbital, aminopyrine, chloroquine, quinine, quinidine, and morphine. Mixtures of meprobamate and acetophenetidin and of amobarbital and pentobarbital were detected in two spectrums. The authors concluded that the infrared identification of toxic substances called for a large collection of spectrums of toxic substances.

Effect of Camphor on Coagulation.—Kivalo (*Ann. med. exper. et biol. Fenniae* 37:227-237, 1959) investigated the mechanism of the hemostatic effect of camphorated oil in nine healthy subjects. When administered intramuscularly it was found to reduce the time of coagulation markedly. Camphor injection produced no positive change in the prothrombin index whereas a reduction in the thrombocyte count might occur. No effect on blood calcium was noted. The reduction of the time of coagulation was thought by the author to be caused by a breakdown of thrombocytes resulting in a higher content of thromboplastin-producing substances in the blood. These investigations supported the contention that the prompt use of camphorated oil for pulmonary hemorrhage was fully justified. On the other hand, its use should be avoided when there is a risk of thrombosis.

Trichomycin.—Vartiainen and Ryynänen (*Ann. chir. et gynaec. Fenniae* 48:100-105, 1959) treated a series of 50 patients who had vaginitis with trichomycin. In 46 patients there was a positive culture of Trichomonas vaginalis. In the remaining four, T. vaginalis were found in the catheterized urine. The control group consisted of 50 patients with vaginitis in whose cultures no T. vaginalis were found. In 78.3% of the patients in whom the culture was negative, no subjective or objective signs of colpitis worthy of mention appeared after treatment. In 15.2% of the patients the subjective symptoms had disappeared almost entirely and objectively only a few organisms were found but both the culture and the cytological smears showed the continued presence of T. vaginalis. In only three patients or 6.5% could no result be ascertained from treatment. The organisms were still abundant and the vaginal mucosa was clearly inflamed. The antibiotic caused no side-effects but trichomonal cystitis did not respond to this treatment.

Prematurity Studies.—Dr. C. E. Räihä (*Nordisk medicin,* May 28, 1959) studied a series of about 2,000 pregnant women. The volume of each mother's heart was measured at some time after the fourth month of pregnancy and on the first day after confinement. The figures thus obtained were correlated with the duration of pregnancy and the weight of the child at birth. The smaller the volume of the mother's heart, the greater was the risk of prematurity. When mothers had a heart volume of less than a certain figure obtained by x-ray examinations in two dimensions, it was found that the risk of prematurity could be greatly reduced by having the mother avoid heavy work and rest at intervals throughout the day. Since prematurity is a mirror of the standard of living of a given community, the risk of it may be 1 to 2% when the standard of living is high. In the various Scandinavian countries it is about 5%. The present study shows that in Finland it is possible to reduce this figure to 2.4%. It should be noted that among the 86,985 infants born in Finland in 1957, 1,514 were stillborn and 1,179 died within the first week of life, giving a perinatal mortality of 3.1%.

Rehabilitation After Brain Damage.—Dr. E. Hillbom (*Nordisk medicin,* July 16, 1959) estimated that Finland has about 4,700 persons who had incurred a cerebral injury. Of these 3,552 were available for statistical analysis. They were treated in (1) a hospital that treated them as inpatients or outpatients and provided facilities for a thorough examination and appropriate treatment, (2) a hostel that housed the totally disabled for whom room could not be found at home, and (3) an institution that provided much varied occupation for the partially disabled who could not quite hold their own in a competitive society.

A special study of 415 veterans showed that 17% had a 0 to 25%, 64% had a 30 to 65%, and 19% had a 70 to 100% disability. Epilepsy occurred in 41%. It was present in 14% of the veterans with slight injuries and in 74% of those whose injuries were severe. The epilepsy was practically cured in 10%, sometimes spontaneously. All of the patients with slight injuries were at work, and so were 97% of the patients with moderately severe injuries, but these were not always full-time jobs. Only 47% of the subjects with severe injuries were at work and in some instances the work was part-time. Of this material as a whole it could be claimed that 86% continued to be active members of the community, capable of earning a living with the aid of the pensions to which they were entitled, 74% had returned to their former occupations, and 13% had successfully undergone training for a new occupation.

Reduction of Respiratory Function by Disease.—Ville Autio (*Acta tuberc. scandinav.* 37:112-125, 1959) performed bronchospirometries on 132 patients with unilateral tuberculous lesions to determine the loss of function occasioned by parenchymal and pleural involvement of varying degree. He found that, whereas parenchymal lesions affected only a small loss of pulmonary function, pleural lesions were much more serious in this respect. By computing the relative contributions of the healthy and affected sides to the predicted vital capacity for the patients examined, it was established that the decrease in the vital capacity of the affected side was not accompanied by an increase in the vital capacity of the contralateral side. The contributions of the affected side to the total oxygen uptake, vital capacity, and ventilation were found to increase in this order. The differences, however, were not large and the distribution of vital capacity between the lungs was believed to reflect the differential function fairly well.

The greater relative ventilation, i. e., relative hyperventilation of the affected lung as compared with its relative oxygen uptake, was especially evident in patients with severe pleural complications. The author concluded that loss of function after resection depended decisively not only on the amount of parenchymal tissue removed but also on the subsequent reaction of the pleura. The seriousness of pleural complications was evidence of the importance of proper hemostasis, postoperative removal of any blood that might have entered the pleural cavity, and immediate expansion of the lung.

GERMANY

Rheumatic Syndrome.—Kraus and Koll (*Med. Klin.* 54:861, 1959) reported that treatment with a mixture of chloroquine diphosphate, aspirin, and prednisone (Elestol) for a maximum of nine months gave distinct improvement in two patients who had spondylarthrosis ankylopoietica (analgesia after two or three weeks and free mobility after five weeks in one patient and slow subjective improvement in the other) and in 22 of 27 patients with recent activation of chronic rheumatoid arthritis (excellent results in 7, good results in 11, and moderate subjective improvement, usually beginning after three to eight days, in 4 patients). Marked and persistent regression of inflammatory swelling and improvement of joint mobility usually occurred in the second week of treatment. Radiographic controls showed no distinct changes. In one nurse no reactivation occurred when work was resumed, although this had happened regularly before. The sedimentation rate declined by 50% in 7 of 10 patients. Improvement of the inflammatory constellation in the serum electrophoresis was demonstrated in 25% of the patients.

When careful trials were made to withdraw the preparation, symptoms recurred but responded well when the drug was used again. No effect was observed in osteoarthritis. As regards side-effects edema developed in three, allergic exanthema in one, and euphoria in isolated patients. About 25% noted gastric pressure in the initial phase of treatment. When distinct improvement had been achieved, the medication was gradually changed to a course of chloroquine alone for 6 to 12 months. Severe reactivations were observed after patients had deliberately discontinued taking the tablets.

Antistreptolysin Reaction in Tuberculosis.—Hudemann and Maas (*Tuberkuloseärzt* 13:192, 1959) made three determinations of the antistreptolysin titer (AST) at intervals of 14 days in 100 patients with tuberculosis (41 with progressive and 59 with regressive forms). Although no streptococcic or rheumatic diseases were clinically observable, elevated values and significant changes of AST were noted in 33% and 25% of the patients respectively. The reason for these changes was not determined. It was not possible to demonstrate an influence of specific chemotherapy on the behavior of the titer. It appears that the antistreptolysin titer in patients with pulmonary tuberculosis requires a critical approach. To suggest a rheumatic condition in tuberculous patients merely from an increased AST does not seem to be justifiable.

Iron Metabolism.—Heilmeyer and Keiderling (*Deutsche med. Wchnschr.* 84:724, 1959) made quantitative determinations of the absolute amount of iron used for hemoglobin synthesis and of the amount of iron not used for this purpose with the aid of radioactive iron in 7 healthy persons, 17 patients with infectious diseases, and 9 with malignant tumors. In those with infections and malignant tumors the incorporation of hemoglobin iron and the turnover of nonhemoglobin iron in erythrocytes were increased. The mean life span of erythrocytes is 60 days in infections, while in health it is about 100 days.

Vitamin C and Ovulation.—T. Nakajima of Kiel (*Zentralbl. Gynäk.* 81:337, 1959) stated that the vitamin C level may offer a further means of determining the time of ovulation. Basal temperature, determination of eosinophils in the peripheral blood, and determination of the pyknosis index from vaginal smears were referred to for comparison. Vitamin C levels were determined in the urine. In a healthy woman with regular menses the vitamin C level showed marked variations in the course of two cycles. The lowest levels were seen at the beginning of and shortly before menstruation. Another lowering of the ascorbic acid level was observed one day after the lowest basal temperature reading in both cycles. In five patients receiving gonadotropin for ovarian insufficiency lowering of the vitamin C level at the time of ovulation was also demonstrable. Uncharacteristic fluctuations were seen in two women who did not respond to gonadotropin. It was not considered feasible to determine the time of ovulation from the vitamin C level alone.

Responsiveness of Corticosteroids to Corticotropin.—J. R. Bierich and co-workers (*Acta endocrinol.* 31:40-48, 1959) reported that under maximum stimulation with long-acting corticotropin given intramuscularly the 17-hydroxycorticosteroids in 25 normal children rose within eight hours from 11.2 ± 2.8 mcg. per 100 ml. to 37.0 ± 6.0 mcg. per 100 ml. The same stimulation given to children receiving prednisone for longer periods resulted in significantly lower values. Longer duration of treatment was paralleled by progressively lower values. After continuous therapy for six months or more the mean basic values were 4.0 mcg. per 100 ml. and the mean final values 5.7 mcg. per 100 ml. After abrupt cessation of the therapy the tests did not become normal until four to seven days later, but the risk of adrenal insufficiency could be reduced by diminishing the doses gradually. Tests which were performed during long-term treatment with additional administration of corticotropin or during intermittent therapy, with prednisone given only four days in the week, showed results within normal limits.

Ten children with rheumatic fever were treated by long-term therapy with depot-ACTH. Daily doses of 30 to 70 I. U. of corticotropin per square meter of body surface led to progressively higher levels of 17-hydroxycorticosteroids, which after several weeks reached values between 70 and 120 mcg. per 100 ml. The basic levels, however, were also low in these patients. Obviously the adrenal cortex had not atrophied but hypertrophied. In contrast to this the corticotropic activity of the hypophysis seemed to be diminished in the same way as after therapy with corticosteroids.

Insulin-Zinc Suspension.—Eckler and Koch of Bremen (*München. med. Wchnschr.* 101:1219, 1959) treated 37 diabetic children daily with insulin-zinc suspension (IZS), most of them for several years. After being treated for several years with two injections of other insulin preparations 17 patients could be treated with only one injection of IZS a day. Twenty patients were treated from the beginning with only one injection of IZS a day. Follow-up examination revealed excellent results in 20 and satisfactory results in 12 patients. The results in five could not be judged, because the follow-up period was too short. In spite of the severity of the disease in most of the children no metabolic disturbances were noted.

Cesarean Section and Diabetes.—A series of 35 pregnancies complicated by diabetes was reviewed by H. J. Siegler (*Geburtsh. u. Frauenh.* 19:384, 1959). Cesarean section was preferred by the author to other methods of delivery in these patients because it greatly reduces perinatal mortality. Peridural anesthesia combined with a "lytic cocktail" consisting of 100 mg. of meperidine, 50 mg. of chlorpromazine, and 50 mg. of promethazine was preferred to inhalation anesthesia because it was not accompanied by a rise in blood sugar level and did not cause fetal asphyxia.

Intracranial Hypertension.—The blood and urine of 210 patients with cerebral tumors with no direct effect on the hypophysis and hypothalamus were examined by Herbert Brilmayer (*Acta endocrinol.* 31:130-136, 1959) who found that in acute intracranial hypertension, parallel with its intensity, leukocytosis, eosinopenia, lymphopenia, sodium and chloride retention, and an increase in the excretion of free corticoids and 17-ketogenic steroids occurred in the urine. In chronic intracranial hypertension no significant findings were observed beyond a slight leukocytosis. When after a chronic course the increase in intracranial pressure reached an excessive degree the findings of an increased steroid excretion and an increased potassium-sodium ratio obtained in acute intracranial hypertension were generally reversed. Thus, values were found which were significantly diminished far below the normal range. Consequently there was a relationship between the intensity and the course of intracranial hypertension on the one hand and the endocrine state on the other. These findings showed that an increased intracranial pressure which had not existed for more than six weeks led to activation of the adrenocortical system.

Cor Pulmonale.—Before starting treatment for chronic cor pulmonale, it is useful to distinguish between a more or less permanent stage of compensation and periodic decompensation due to infection. Management of this condition is still one of our most difficult problems, but knowledge of the associated disorders of function produced therapeutic possibilities that have greatly improved the prognosis. Treatment of the peripheral circulation is of great importance. Treatment in general consists of (1) antibiotics for the endobronchial infection resulting in bronchospasm, (2) relief of the bronchospasm, and (3) relief of hypoxemia. Patients with respiratory paralysis are the most difficult to treat. The author prescribes analeptics for these patients. This permits the simultaneous treatment of several patients in a general hospital without the use of a respirator.

HUNGARY

Private Practice Curtailed.—The Hungarian daily newspaper *Nepszabadsag* (March 28, 1959) announced that a recent government decree had made it impossible for a physician to devote his time exclusively to private practice. Only if the doctor has a full-time job in a state organization is he allowed to have some private patients. The Minister of Health was claimed to be the final authority to determine under what circumstances a physician could have a private practice.

JAPAN

BCG Vaccine.—Ebina and Saito (*Acta tuberc. scandinav.* 37:162-174, 1959) reported comparative studies on the prophylactic and protective value of BCG vaccine. A group of 3,211 BCG-vaccinated and 2,615 unvaccinated students, nurses, and inhabitants of two farm villages were observed for one to four years. The morbidity from tuberculosis per 1,000 persons was significantly lower in the vaccinated than in the unvaccinated. Among nurses observed for four years the morbidity was 20.2 per 1,000 for the 198 unvaccinated and 14.4 per 1,000 for the 208 vaccinated. Tuberculosis was observed four times as often in 1,990 unvaccinated persons ranging in age from 14 to 25 years who attended the outpatient clinic because of symptoms suggestive of tuberculosis as in 2,147 vaccinated persons attending the clinic. In the outpatients acute forms of tuberculosis such as miliary, pneumonic, and mixed type with cavity formation occurred more frequently in the unvaccinated while indurative types occurred more frequently in the vaccinated.

Concerning the extent of lesions, more patients with moderately advanced and far-advanced tuberculosis were seen in the former group and more patients with minimal tuberculosis in the vaccinated. Among a group of 90 vaccinated and 282 unvaccinated patients hospitalized because of the serious nature of their tuberculosis, the condition of 92.2% of the vaccinated and 77.7% of the controls improved. The condition of the remaining 7.8% of the vaccinated and 22.3% of the unvaccinated remained unchanged or became worse. The mortality from tuberculosis in all three groups studied was significantly higher in the unvaccinated than in the vaccinated. No significant differences were observed in the occurrence of tuberculosis and the type of disease in 252 persons who had received nonlyophilized BCG vaccine as compared with 378 who had received lyophilized vaccine.

KOREA

National Tuberculosis Association.—An armistice agreement in 1953 halted the military fighting in Korea, but the people of South Korea are still waging warfare on many other fronts. The ravages of war left a nation plagued by overcrowding, malnutrition, breakdowns in sanitation, and shortages of medical supplies. Among the most widespread of the war-spawned diseases is tuberculosis. Its incidence in South Korea is 4%, or 13 times the rate reported in the United States. Because of the need to support their families, many of those with open lesions cannot be isolated. A bright spot in this dismal picture is the effort of 300 volunteer workers who comprise the Korean National Tuberculosis Association. These dedicated persons, although struggling themselves to live in an insecure economy, have sacrificed their time and efforts without pay to battle tuberculosis.

Three treatment centers are now operating at Seoul, Taegu, and Kwangju. The clinics follow a procedure of mass roentgenography and centralized treatment which was established for the Republic of Korea by the United States Army Advisory Group. Each new patient is registered, given a medical examination, roentgenograms are taken, and if tuberculosis is found the patient may be treated at the center. Despite limited facilities and equipment, the doctors, nurses, and technicians are able to process 100 patients a day. As in the United States, the chief source of funds is the annual sale of Korean Christmas seals. Additional money from government subsidies, United States contributions, contributions from United States personnel stationed in Korea, and the sale of tuberculosis literature and subscriptions to the *Journal of Tuberculosis* aid in the work of the association.

The association is also conducting an active educational program in the form of lectures, demonstrations, and refresher courses for workers at government health centers. Magazines, films, posters, and pamphlets are supplied to schools and civic groups to combat public ignorance and misconceptions about tuberculosis. The association also sponsors vaccination for school children. This program, initiated in 1950 by a group of Scandinavian doctors, is being carried on by the association. Last year 80,000 children received BCG vaccination. The results of this program are paying off in a dropping incidence of tuberculosis for this age group. The association also furnishes grants-in-aid for tuberculosis research. Funds have been set aside for three additional free clinics to be established

NORWAY

Comparison of Analgesics.—Ivar Lund (*Nord. med.* 61:854-856 [June 4] 1959) compared the analgesic effect of dihydrocodeine with that of morphine, meperidine, and a placebo of saline solution in 218 patients with postoperative pain. Satisfactory relief of pain was obtained with 90% of 156 doses of morphine, with 87% of 160 doses of meperidine, with 77% of 188 doses of dihydrocodeine, and with 47% of 90 doses of saline solution. The author suggested that the analgesic effect of dihydrocodeine ideally should be compared with a dose of morphine that produced no more respiratory depression than did the optimal dose of dihydrocodeine (30 mg. per 70 kg. of body weight). This would possibly provide information as to whether or not relief of pain and depression of respiration were inseparably linked in dihydrocodeine as they are believed to be in the common analgesics.

Enzyme Treatment of Arteriosclerosis.—A series of 6 patients suffering from intermittent claudication and 20 who had obliterative arteriosclerosis were treated with Vasolastine, stored under optimal conditions, by Otto Selvaag and co-workers (*Nord. med.* 61:713-717 [May 7] 1959). This drug is a combination of citrogenase, amino acid oxidase, and tyrosinase. In two patients the treatment was abandoned. The remaining 18 patients received 22 to 160 injections over a period of 2 to 14 months. Five of the patients with intermittent claudication and one with angina pectoris improved during the period of treatment. The subjective improvement in two patients with claudication was especially good but even then arteriographs showed an increase of intimal lesions in the femoral arteries. Most probably the improvement was due to a more effective collateral circulation. The 18 patients who were treated for more than two months had a serum cholesterol value averaging 350 mg. per 100 ml. before treatment. At the end of the treatment the serum cholesterol value was 363 mg. per 100 ml. For the seven patients treated more than nine months, the figures were, respectively, 403 and 397 mg. per 100 ml. Changes were therefore insignificant in serum cholesterol values during or after treatment. There was no improvement in the arteriographs of the aortic, iliac, or femoral arteries. No immediate effect of the injections on the temperature of the skin and the muscles in the lower extremities was noted.

Transurethral Prostatic Resection.—At the Rikshospital in Oslo, transurethral resection is chosen for 80% of the patients with benign prostatic hyperplasia and retropubic prostatectomy is chosen for the rest. The choice of operation is largely determined by the size of the prostate and the wishes of the patients. To compare the respective merits of the two methods, Dr. W. Mathisen (*Tidsskrift for den norske Laegeforening,* July 1, 1959) made a five-year follow-up examination of 347 patients. Of the 258 who had had transurethral resection, 20% and, of the 89 who had had retropubic prostatectomy, 48% suffered from total retention of urine on admission. In the former group there were no operative deaths and in the latter there was one. In the former, 93% and in the latter, 83% had an uncomplicated postoperative course. Mathisen tempered his praise of transurethral resection with the warning that the procedure is technically difficult.

Nephrectomy.—The admission to the hospital of two comparatively young patients who had developed hypertension a few years after nephrectomy caused Mjölneröd and Prydz (*Tidsskrift for den norske Laegeforening,* July 1, 1959) to wonder what the long-term prognosis is with regard to blood pressure in such patients. They undertook a follow-up examination of 59 of these. The indication for nephrectomy was pyohydronephrosis in 24 patients, hydronephrosis in 19, calculi in 7, traumatic rupture in 5, hypoplasia in 3, and essential hematuria in 1. Of the seven with a high preoperative blood pressure the hypertension in two persisted after the operation. Of the remaining 52 patients with a normal preoperative blood pressure 12 developed hypertension. Though this investigation yielded no clear-cut answer to the questions raised, it suggested that hypertension may be anticipated in 20 to 25% of the patients on whom nephrectomy is performed for unilateral disease.

Acute Osteomyelitis.—Dr. K. Stray (*Tidsskrift for den norske Laegeforening,* July 1, 1959) reviewed a series of 32 patients who had acute osteomyelitis with special reference to the mistakes made before many of these patients were admitted to the hospital. In 19 they had long remained at home because some other ailment such as rheumatic fever or phlegmon of the soft tissues had erroneously been diagnosed, or because an early roentgenogram had been negative. Ten of these 19 had been given inadequate doses of penicillin which had only confused the issue and masked the correct diagnosis. In one patient the illness had lasted for 120 days and in another it had lasted for 63 days before admission. In spite of such delays, and because of the penicillin given in large doses over a long period, there were no deaths. A follow-up examination showed that 31 of these patients had recovered completely. The one exception was a patient who had had a series of abscesses lasting a few days and recurring at long intervals.

Relapsing Gonorrhea.—Dr. H. C. Gjessing (*Tidsskrift for den norske Laegeforening,* July 1, 1959) stated that since 1952 there has been a marked rise in the frequency of relapses after the treatment of gonorrhea with penicillin. Although the same preparation and dosage was used, the relapse rate rose from about 2.3% at the end of 1954 to about 10% at the end of 1957. Evidently the dosage of 300,000 units had become insufficient, and since January, 1958, the dosage has been raised to 600,000 units of procaine penicillin. Since September, 1958, the penicillin resistance of the causative organism has been determined before treatment is given.

SPAIN

Contest for Blanco Soler Prize.—Physicians of any country in the world are entitled to enter this contest but their writing must be in Spanish. The manuscript must be typed double space, on only one side of the paper, and be over 100 pages long. The topics to be treated are problems of art, history, literature or philosophy, and their relation to medicine. Each monograph must have a title and be accompanied by a sealed envelope containing the same title as the monograph and the author's name. Therefore, no work should be signed or include any indication of the author's identity. The monographs for this contest should be bound or simply have the pages sewed together. They should be sent in duplicate, by registered mail to Dr. Don Juan Fernán Perez, Secretary General, calle de Fuencarral, 113—Madrid. The closing date for entering this contest is Nov. 30. The presentation of prizes will be made during the inaugural meeting of the Association of Physician Writers and Artists in the assembly room of the Official College of

Doctors, Madrid—calle de Esparteros, 11. The first prize is 5,000 pesetas and a gold medal. The second prize is 2,500 pesetas and a silver medal. For honorable mention bronze medals will be awarded.

UNITED KINGDOM

Parking Privileges for Doctors.—Doctors are to have curbside parking space reserved for them and will be issued badges for their automobiles, the annual meeting of the British Medical Association (BMA) in Edinburgh was told by the chairman of the Private Practice Committee. The BMA has been assured of support from the Ministry of Transport for reservation of space outside or near surgeries and hospitals in controlled parking zones. Badges will be issued to those who use cars for house calls or visits to establishments where there is no parking lot. Local authorities will be urged to exempt doctors from excess charges on parking meters when they have been required to stay with patients longer than the permitted parking period.

Family Frictions and Divorce.—At the same meeting, leading London psychiatrists agreed that it was not a bad thing for children to see their parents quarrel in a civilized way and make up. If inoculated with small doses of parental disharmony, children become immunized and realize that this kind of thing can happen in marriage. Concealment of parental disharmony, said Dr. D. Stafford-Clark, might result in a build-up of tensions. Then the children will see, not the long-stoked fires of resentment but the holocaust that burns down the house. If parents can quarrel and make up in front of the children their marriage will stand a better chance and the children will grow up to realize that minor quarrels do not lead to divorce. Every marriage worth saving has headed for the rocks at some period.

Rapid Growth, Short Life.—At the same meeting, Prof. P. L. Krohn, of Birmingham University, said that people age fastest when they are youngest and begin to age more slowly as they get older. A diet giving the maximum rate of growth is not the best for a long life span. Rapid growth and short life go together.

Alternative to National Health Service.—At the same meeting, an alternative to the National Health Service was discussed. The cost of the scheme would be met in part by the state and out of insurance funds. Doctors would be paid for each service that they rendered. Control would be by an independent body on which the medical profession, the public, the government, and recognized insurance agencies were represented. The association's council, representing more than 72,000 doctors, was instructed to approach other professional bodies about the formation of a confederation of professional associations. Dr. E. A. Gerrard said that, while the influence of the trade unions and big business had steadily increased, that of the professional classes had tended to diminish. The proposed confederation should be free from party politics.

No New Hospitals.—At the same meeting, attention was called to the fact that not one new general hospital had been completed in Great Britain since the National Health Service started. The policy of the Ministry of Health has been one of patch and mend. The hospital standards are rapidly falling behind those of almost all the countries of Western Europe. If this continues it is inevitable that the standard of medical service will also deteriorate.

Patients Outnumber Population.—The number of persons on doctors' lists in London last year, 3,449,601, was 224,601, or nearly 7% more than the 3,225,000 estimated to live in the area. This is stated in the 11th annual report of the London Executive Council of the National Health Service. The inability to identify persons who died, emigrated, or joined the armed forces accounted for much of this inflated figure. About 50% of those reported as treated were without a health service number. Much of the inflation arose from immigration. As a result of inquiries among immigrants who had been registered with a doctor for more than a year, many were being removed from lists for such reasons as "returned abroad" and "whereabouts unknown." The report gives details of visitors from 59 countries who were treated. People from Eire, Australia, the United States, Germany, South Africa, India, Canada, the West Indies, East Africa, West Africa, and France topped the list.

Federation Wants Doctors.—The Central African Federation's senior medical officer hopes to persuade the government to cut the element of risk for young medically skilled immigrants by guaranteeing free return air transportation for interns, who, on completing a year's work, are told that the federal medical service will not provide the career they seek. Rhodesia and Nyasaland suffer from a shortage of skilled medical staff, largely because Africans now seek treatment which they used to regard with deep suspicion. Thus, although the number of the Federal Ministry of Health's medical officers rose from about 200 to about 240 during the five years ending in 1958, in the same period admissions of African inpatients were almost doubled.

Sensitivity to Poliomyelitis Vaccine.—Streptomycin and penicillin are used in the manufacture of poliomyelitis vaccine from infected monkey kidney cultures, and although the possibility of allergic reactions to the vaccine has always been considered no case had been reported in Britain until Thomson and Fletcher (*Brit. M. J.* 2:39, 1959) described an immediate sensitivity reaction to the vaccine in a nurse. Within five minutes of receiving an injection intramuscularly she felt a generalized itching, particularly about the eyes, which began to swell until she could hardly see. She had a throbbing sensation in her ears, abdominal cramps, and symptoms of shock. An injection of 1 ml. of 1:1,000 epinephrine solution was given subcutaneously which gradually relieved the condition. Because of her occupation and youth it was decided to complete the immunization six weeks later. A course of injections of 0.1 ml. of poliomyelitis vaccine was planned at weekly intervals. These produced periorbital edema, nausea, agitation, and trembling, but the symptoms subsided within 10 minutes after administration of epinephrine and chlorpheniramine maleate. It was estimated that only 3 to 10 units of penicillin and 20 units of streptomycin were present in 1 ml. of the vaccine.

The authors recommend that, before poliomyelitis vaccine is given, the patient or the parent should be asked if there is a history of penicillin or streptomycin sensitivity and that if there is any doubt a test dose should be given intradermally. Particular attention should be paid to those who work with these antibiotics. If available, penicillinase should be given several hours before the vaccination.

Installation of the President.—Because the Duke of Edinburgh was still in Canada during the Joint Annual Meeting of the British and Canadian medical associations in Edinburgh in July, his installation as President of the British Medical Association was postponed until the autumn. The ceremony will take place in BMA House on Oct. 28, and in the evening the Duke will be present at the council dinner of the association. In his absence the following message was read:

"When I accepted your invitation to become President of the British and Canadian Medical Associations, I had every intention to be present at the joint meeting in Edinburgh. However, as I am sure you know only too well, nothing in this life is entirely certain, and I am at present in Canada due to circumstances quite beyond my control. I am particularly sad not to be with you, because this meeting of British and Canadian medical men is just that kind of Commonwealth cooperation which can do the most good. The meeting together of men of like minds, working to the same end, demonstrates the value of the Commonwealth connection and uses it to achieve practical results.

"Although I have to miss the joint meeting in Edinburgh, I have had the privilege of being installed as President of the Canadian Medical Association in Toronto only a short while ago. This was a most pleasant and successful affair, which I am sure my Deputy President, Dr. Kirk Lyon, will confirm. Later this year I look forward to my installation as President of the British Medical Association. As I understand that it is customary for the president to deliver a short address on that occasion, I do not propose to anticipate that task today. This is simply a short message of apology and encouragement in my unavoidable, but still regrettable, absence. I hope very much that you will all enjoy the present meeting and that the arguments will be fierce and long. There is no better way to find out the strength of opinions and ideas than open and unfettered discussion. It is also my hope that the whole meeting will take place in a happy and cooperative atmosphere, because it is bound to color the outlook of all those who are attending for the next 12 months, and, speaking as a customer, I would rather be attended by someone who had been inspired by happy and lively conference than depressed by a series of dull debates. I wish the meeting every success."

Trachoma.—It is hoped that means to prevent or cure trachoma will result from discovery of the causal agent. Isolation of the causative virus was achieved by Dr. L. H. Collier and Mr. J. Sowa, working in Gambia. The virus had been found a little earlier in Peking, but the British workers were the first to demonstrate that it caused trachoma in man. The virus was inoculated into the conjunctiva of a blind volunteer and resulted in typical trachoma.

Delivery by Suction.—According to an annotation in the *British Medical Journal* (July 18, 1959) the replacement of traction forceps by an instrument using suction was considered even before 1849. Recently the vacuum-extractor of T. Malmstrom, of Gothenburg, has given fresh impetus to the idea. The instrument consists of a suction cup attached by a chain to a metal traction handle and connected to a vacuum pump and meter. The cup, which is made in four sizes from 55 to 80 mm. in diameter, is applied to the fetal scalp, and a vacuum of 0.6 to 0.8 kg. per square centimeter is formed. Traction is then applied intermittently in time with the uterine contractions.

W. D. Cunningham, of Sydney, Australia, used the vacuum-extractor in a series of 21 patients in preference to the conventional forceps. He was impressed by the fact that excessive or ill-directed traction was impossible because the suction cup would come away if the surface to which it was applied was not relatively flat or if the force exerted exceeded that of the suction. Moreover, the compression action of ordinary forceps was absent.

O. G. A. Berggren, of Linkoping, Sweden, reported that in a 12-month period of 1956-1957 before the vacuum-extractor was introduced the cesarean section rate of delivery was 2.1% and the forceps rate was 3%. In the following 12 months the vacuum-extractor was used in 75 deliveries (4.6% of the total), and the cesarean section rate fell to 1.3% while forceps were applied only once. The most common indications for employing suction were fetal distress and failing uterine contractions, but, whereas Cunningham used the vacuum-extractor only when the traditional conditions for forceps extraction were fulfilled, Berggren used the instrument in eight deliveries before the cervix was fully dilated and in six while the head was still high. Berggren is convinced that the vacuum-extractor is less hazardous to mother and baby than conventional forceps. The artificial caput succedaneum which the suction cup caused usually disappeared within a day, and in only 10 of the 75 babies was the mark still apparent after a week. There was no increase in the incidence of intracranial damage to the fetus after the introduction of the new instrument.

Life in the Frozen or Dried State.—Parkes and Smith (*British Medical Journal,* May 16, 1959) stated that suspended animation is achieved in nature by dessication more often than by freezing and that the ultimate aim of all biologists engaged in the preservation of life at low temperatures is to graduate from freezing to freeze-drying, so that the material can be kept on the shelf, rather than in the freezer. Life depends essentially on a cycle involving water, oxygen, carbon dioxide, fixed nitrogen, and a temperature at which interaction is possible. Many lower organisms and most plants produce spores or seeds which have a very low water content and a negligible respiration rate, and thus have a high resistance to cooling, drying, and lack of oxygen.

Young or hibernating warm-blooded animals have something in common with cold-blooded animals in that their body temperature can be reduced to a few degrees above 0 C without damage. The hibernating bat can survive at several degrees below zero provided it does not freeze. In all these cases, however, heartbeat and respiration still proceed slowly, so that the state is not one of suspended animation. There is no evidence that the cold-blooded vertebrate or the young or hibernating warm-blooded animal has any immunity to the damage caused by conversion of body water to ice. In adult nonhibernating mammals the position is still more difficult because breathing and circulation cease when the internal temperature is reduced to between 25 and 15 C. When cooled below that range the respiration and circulation cease and death was supposed to be inevitable. This is now known not to be so, and by special methods mice, rats, dogs, and monkeys have all been revived from deep body temperatures approaching 0 C after cessation of breathing and heartbeats for up to one hour. Recovery is usually complete and tests on resuscitated rats have shown no impairment of memory or learning ability following the severe anoxia. Dogs and monkeys showed no change in reflexes or in behavior.

In the hamster, a potential hibernator, the body temperature was reduced to less than zero by immersion in a bath at —5 C. In these circumstances the animal may start to freeze, or it may supercool. In the freezing animal, body water begins to be converted to ice in the superficial tissues, in which case the deep body temperature drops only slowly below the freezing point of the blood (—0.6 C). Such animals have been resuscitated undamaged after the body temperature has been below the freezing point for up to one hour, at which point about 50% of the body water had been converted to ice. During supercooling the body temperature is not maintained by the latent heat of crystallization of water, and falls rapidly to that of the surrounding bath. The supercooled state may be terminated by the sudden crystallization of ice throughout the tissue fluids, which results in a rapid rise of body temperature to freezing point and is very dangerous to life. If spontaneous crystallization does not occur, supercooled animals can be revived in perfect condition.

In man, body temperature is now commonly reduced to about 28 C for surgical purposes, but at this temperature the heart still beats slowly, and natural breathing can, if necessary, be supplemented by artificial respiration. Recently, Niazi and Lewis reported that a patient had survived cooling to a deep body temperature of 9 C without circulating her blood through a pump oxygenator. The heart was at a standstill for one hour. After rewarming, the patient recovered consciousness and survived 38 weeks thereafter without any apparent alteration in neurological or intellectual functions. Before treatment she had been in the terminal stages of inoperable pelvic carcinoma with abdominal and pulmonary metastases. She eventually died from the spread of the original disease. This temperature (9 C) is the lowest recorded in a human adult who subsequently recovered. Temporary cooling to this degree may prove of great value in medicine and surgery.

New Hypotensive Agent.—The medical treatment of malignant hypertension has hitherto been based on the use of drugs blocking transmission at the synapses of the autonomic ganglions. While they block preganglionic sympathetic impulses, and so reduce blood pressure, they also block preganglionic and postganglionic parasympathetic action, and for this reason produce such undesirable side-effects as constipation, blurring of vision, and dryness of the mouth. Professor Rosenheim and co-workers have used a new type of hypotensive drug, bretylium tosylate, which selectively accumulates in adrenergic nerve endings in sufficient concentration to block adrenergic (peripheral sympathetic) transmission, without antagonizing the direct action of circulating epinephrine and levarterenol (*Lancet* 2:17, 1959). It thus produces a fall in blood pressure without undesirable side-effects, on either the sympathetic or the parasympathetic systems. Animal studies by Boura showed that it produces a generalized blocking of the sympathetic nervous system in doses that do not inhibit parasympathetic activity or interfere with transmission in the central nervous system. Studies with the drug labeled with radioactive carbon (C^{14}) showed that its high specificity of action is probably the result of selective accumulation in adrenergic nerves. Unlike such drugs as phentolamine, bretylium is not adrenolytic.

Observations on normotensive volunteers and hypertensive patients showed that the new drug effectively reduces blood pressure and can be used for the long-term treatment of hypertension. The effective dose varies widely from person to person (130 to 840 mg. three times a day by mouth). A series of 24 hypertensive patients were thus treated, some for six months, with excellent results. Hourly blood pressure records showed that control of blood pressure was fairly smooth if the drug was given every eight hours. The hypotensive effect of bretylium is potentiated by chlorothiazide. The only side-effect observed was transient congestion of the nasal mucosa in some of the patients. Tests with C^{14}-labeled bretylium showed that a single dose of the drug is completely eliminated in 24 hours.

Continuous Blood Pressure Monitor.—A new continuous blood pressure electronic monitor, invented by Dr. J. H. Green of the department of physiology, Middlesex Hospital Medical School, London, is now in commercial production. Not only does it enable physicians to obtain a continuous reading of a patient's blood pressure but also it will regulate the supply of drugs to the patient to maintain a predetermined blood pressure level. The blood pressure follower, as it is called, has been in use for the last 18 months in the operating room of a London hospital.

Instead of the usual method of using an arm cuff and a stethoscope to listen to sounds in the artery distal to the cuff, the new instrument requires only a small cuff containing a crystal microphone that is fitted over the patient's finger. The main disadvantage of the arm cuff method is that it causes discomfort to the patient if left on for any length of time and that the stethoscope can be used only in quiet surroundings and provides only spot readings. Another method, in which a cannula is inserted into an artery, also causes discomfort and carries with it the danger of clot formation in the artery. The new method is painless and can be used while the patient is asleep, when the necessary information may be relayed to a remote point such as a nurses' office. Any abnormal change in pressure immediately alerts an alarm system and bells or lights will give warning at the control point.

One of the main principles on which the instrument is based is the use of a finger as the source of pulsation. A piezoelectric crystal, which acts as a microphone, is placed over the digital artery. The finger is then inserted in a cuff and the cuff is enclosed in a rigid plastic tube. The cuff is then inflated from a small pump in the apparatus. The piezoelectric crystal responds to variations in the digital pulse and the impulses from the crystal are used to control the pressure in the cuff and thus provide a continuous recording.

An electromagnetic valve opens and closes with the pulsations. A fixed leak deflates the cuff when arterial pulsations stop as the pressure in the cuff exceeds systolic arterial pressure. The electromagnetic valve then opens automatically, more air is pumped into the cuff, the cycle is completed, and then repeated for any required period. The cuff pressure in this way follows changes in systolic blood pressure and all such changes are revealed on the instruments of the apparatus. An important principle of the procedure is the insertion of the entire finger into the rigid plastic tube which contains the pneumatic cuff. By this means the risk of edema is minimized when used over a long period. Moreover, the cuff can be worn for many hours without discomfort and records can be obtained over still longer periods merely by changing the finger used every four hours or so.

One of the invention's main advantages is that it enables a continuous trouble-free record of blood pressure changes throughout an operation or in the ward. With this instrument, it is also possible to pre-set the required blood pressure level for as long as required, and a solenoid device automatically controls the intake of drugs, so that blood pressure constantly remains at the required level. Any variation from the predetermined maximum and minimum automatically sets off an alarm immediately, at the same time cutting off the supply of the drug. In patients with shock in whom the blood pressure and the impact of the shock are closely related, the instrument provides constant observation and gives prior warning of dangerous changes in blood pressure level. This information is of great value especially if blood transfusions have been given.

There is a large potential use for this apparatus in the field of psychiatry. This is not a so-called lie detector, but practitioners in the treatment of mental ailments should welcome this means of recording emotional responses, relative to changes in blood pressure. One big advantage of the instrument is the fact that it can be used so unobtrusively. Eliminating the emotional stress usually induced by direct contact with the consultant, it can be used to record away from the room where the patient is relaxing.

CORRESPONDENCE

VETERANS' NON-SERVICE-CONNECTED DISABILITIES

To the Editor:—The Medical and Chirurgical Faculty of the state of Maryland (Maryland State Medical Association) has, for many years, expressed concern over the inroads the Veterans Administration hospitals are making into the realm of the private practice of medicine. In order to combat the fantastic growth of treatment of non-service-connected ailments of veterans, the faculty has passed many resolutions condemning this practice and urging that something concrete be done to curtail or stop this insidious growth. The faculty's House of Delegates at its 1959 annual meeting passed a resolution that all component medical societies of the American Medical Association be contacted and urged to support the faculty's stand in this respect.

As a result of a letter sent to every A. M. A. component medical society, 11 answers have been received, all in the affirmative. It is anticipated that other societies will also reply in the affirmative and that full support to this projected concerted action will be forthcoming from them as well. It is hoped that an appropriate resolution will be introduced in the A. M. A.'s House of Delegates at its clinical session in Dallas in December.

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Committee on Veterans' Medical Care
1211 Cathedral St.
Baltimore 1.

MEDICAL FILM REVIEWS

Hands: Psychiatric Occupational Therapy: 16 mm., color, sound, showing time 28 minutes. Prepared by Jackson A. Smith, M.D., Omaha. Produced in 1958 by and procurable on loan from Audio Visual Aids Section, Nebraska Psychiatric Institute, Omaha 5, Neb.

It is a regrettable fact that only a few deeply empathic character actors can undertake the portrayal of a psychiatrist, a mental patient, or a professional psychiatric aide without becoming strained, stilted, or overtheatrical in manner, gesture, or voice. This almost universal handicap applies also to this film but, happily, it has few other defects. In substance it relates how a young schizophrenic woman is induced to explore and express her relationship with people past and present by molding a series of clay figurines in the occupational therapy section of a mental hospital, and how this form of communication is utilized therapeutically by the occupational therapy worker under frequent psychiatric supervision. True, the figurines purportedly carved by the patient are actually minor masterpieces of mimetic art, and the sequences omit mention of any other concurrent therapy; yet, this glorification of a single aspect of the treatment makes the film's message all the more vivid. The author's script is clear and psychiatrically sound, the color photography is superb, and the musical background unobtrusively expressive. The film, even without expert introduction or subsequent commentary, is recommended for exhibition to lay and professional groups interested in ancillary techniques in psychotherapy.

NEW FILMS ADDED TO A. M. A. MOTION PICTURE LIBRARY

The Operating Microscope in Otologic Surgery: 16 mm., color, silent, showing time 24 minutes. Prepared in 1958 by George E. Shambaugh, M.D., Eugene L. Derlacki, M.D., and Wiley H. Harrison, M.D., Chicago. Procurable on loan (service charge $4) from Motion Picture Library, American Medical Association, 535 N. Dearborn St., Chicago 10.

The history of the development of the operating microscope is traced with unposed photographs of the persons who were chiefly responsible for this innovation. Examples of the use of this instrument in reconstructive surgery of the middle ear are shown. (Reviewed in J. A. M. A., December 6, 1958, page 1935.)

Stapes Mobilization, Footplate Visualization Method: 16 mm., color, silent, showing time 11 minutes. Prepared in 1956 by George E. Shambaugh, M.D., Eugene L. Derlacki, M.D., and Wiley H. Harrison, M.D., Chicago. Procurable on loan (service charge $3) from Motion Picture Library, American Medical Association, 535 N. Dearborn St., Chicago 10.

The original, relatively blind, tactile method of mobilizing the stapes has been changed to a more exact controllable technique by direct visualization of the footplate under the operating microscope. The method of exposing the footplate to direct inspection and several methods of achieving mobilization are demonstrated. (Reviewed in The Journal, June 1, 1957, page 601.)

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Radioiodine Therapy of Hyperthyroidism. G. E. Sheline and E. R. Miller. A. M. A. Arch. Int. Med. 103:924-932 (June) 1959 [Chicago].

The authors report on 431 patients with hyperthyroidism, who were treated with radioiodine (I^{131}) at the University of California Medical Center in San Francisco between September, 1945, and June, 1957. Of the 431 patients, 324 had hyperthyroidism with either diffusely enlarged or normal-sized thyroids; 78 patients had thyrotoxicosis recurrent after subtotal thyroidectomy; and 29 patients had toxic nodular goiters. Although thyroidectomy was considered the treatment of preference in these patients, they were treated with I^{131} either because of refusal of, or medical contraindication to, surgery. A number of patients in each category had had some previous therapy with one of the antithyroid drugs; however, it had been discontinued several weeks or months before the institution of I^{131} therapy. Patients of all ages appeared in the toxic diffuse and postsurgical recurrent goiter groups, whereas all patients with toxic nodular goiters were 40 years of age or older. Patients were placed on sedation, dietary regimen, vitamin supplementation, and other supportive therapy as necessary and were seen at monthly intervals. The patients were retreated at intervals of about 2 months until hyperthyroidism was controlled.

In 95% of the 431 patients the toxicity was controlled with I^{131}; therapy in the other 5% was incomplete. Thyrotoxicity was controlled in 59% by one dose of I^{131}, and 61% became euthyroid within 3 months. Hypothyroidism developed in 17%, and there was recurrence in 3% of the patients with toxic diffuse goiters. Exophthalmos may improve, appear, or progress after I^{131} therapy. Although comparison is difficult, it would appear that in this respect the results are about the same or are slightly better than after surgical subtotal thyroidectomy. Orbital decompression became necessary in one patient, but in no patient was vision lost. There was one unexplained death 3 weeks after treatment with I^{131}. Three patients under 20 years of age developed thyroid nodules 5 or more years after therapy.

The Role of Benign Esophageal Obstruction in the Development of Carcinoma of the Esophagus. R. A. Joske and E. B. Benedict. Gastroenterology 36:749-755 (June) 1959 [Baltimore].

Of 1,026 patients with disease of the esophagus who were admitted to the Massachusetts General Hospital in Boston between 1947 and 1956, 554 had carcinoma and 472 had benign esophageal obstruction; carcinoma later developed in 13 of the 472 patients. The form of benign esophageal obstruction which was initially present in these 13 patients, between the ages of 35 and 78 years, consisted of esophageal web in 4, lye stricture in 3, achalasia of the cardia in 3, and peptic stenosis, congenital stenosis, and benign stenosis of unknown origin in 1 patient each. There were 7 men and 6 women. In all the patients the stricture had been present for many years before the development of carcinoma, the average duration of symptoms being 30 years in women and 30.7 years in men. The earlier development of carcinoma in the men was due to an earlier occurrence of esophageal obstruction and not to the endocrinologic environment in which the tumor developed.

In 11 of the 13 patients it was possible in retrospect to observe a change in the clinical aspect concomitant with the development of carcinoma, and from this to ascertain what symptoms in a patient with esophageal obstruction should be regarded as suspicious and investigated further. In 5 of these patients the first symptom of carcinoma was the return of dysphagia after a prolonged period of relative lack of symptoms, ranging from 21 to 50 years. In 6 patients carcinoma developed while regular treatment of the benign obstruction was being carried out, and without an interval of freedom of symptoms. All these patients had continued dysphagia. Dysphagia was thus an important symptom in all 11 patients. Loss of weight was the next most frequent symptom and was noted in 9 patients. Pain was not prominent, being stressed only by 6 patients. In 3 of these, pain was not due to esophageal obstruction, but to secondary pneumonia. Physical examination was of direct diagnostic help in one patient in whom a high carcinoma with infiltration had immobilized one vocal cord.

The place of publication of the periodicals appears in brackets preceding each abstract.

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Three patients had aspiration pneumonia. None had severe anemia. A correct roentgenologic diagnosis of carcinoma was made in 3 of 9 patients; in 2 patients roentgenologic examination was not performed, as the diagnosis was already established by other means. The diagnosis of esophageal carcinoma was correctly made by esophagoscopy in 7 of the 11 patients. Biopsy confirmation of carcinoma was obtained in 9 patients. Despite early diagnosis and the fact that in most patients carcinoma developed while the patient was under direct medical observation, the prognosis was poor. Ten of the 13 patients are known to be dead.

Carcinoma of the esophagus is an unusual but definite complication of benign esophageal obstruction. Its incidence is particularly high in patients with esophageal web and lye stricture. It also occurs much more frequently in patients with achalasia and peptic stenosis than in the general population. There is no characteristic clinical syndrome due to this combination. Recurrent or persistent dysphagia in a patient with benign obstruction merits further investigation with roentgenologic examination, esophagoscopy, and biopsy after careful preparation of the esophagus. The bad prognosis of these carcinomas can be improved only by awareness of the possibility of carcinoma in patients with benign lesions of the esophagus.

Radioactive Fat Absorption and Clinical Response of Sprue to Steroid Therapy: Report of Three Unusual Cases. C. H. Brown, O. Glasser and E. J. Kurt. Gastroenterology 36:760-769 (June) 1959 [Baltimore].

The authors report 3 unusual cases of sprue in women, aged 24, 49, and 39 years respectively. Each patient had diarrhea and a low serum albumin content and was malnourished. Two patients had hypocalcemia, tetany, and osteoporosis; 2 had edema; and 1 had bleeding with an increased prothrombin time (180 seconds) which became normal 8 hours after vitamin K was given intravenously. Radioiodine-tagged triolein and oleic acid curves showed poor absorption and "flat" uptake curves for all 3 patients. None of the patients responded clinically to standard treatment, including the gluten-free diet, vitamin B_{12} given intramuscularly, and other measures. The patients then were given prednisone, in doses of 5 mg., 3 or 4 times daily for one week, to which they responded. Repetition of the radioactive fat studies after steroid therapy showed great improvement in the absorption of fat, paralleling the clinical response. Steroid therapy would seem indicated for patients with sprue who do not respond to other treatment.

Since many patients with sprue may not have the typical symptoms and signs of the disorder but its complications, diagnosis is difficult, and the diagnostic technique is one of exclusion. Radioactive fat studies of such patients can be of help, because they uniformly show poor absorption with "flat" uptake curves. Determination of the uptake of radioactive triolein and oleic acid is a dependable, simple, and objective measure of fat absorption. Radioactive fat studies can be of aid not only in the diagnosis of sprue but also in determining the response to treatment.

Malabsorption Syndrome: Review with Special Reference to Primary Malabsorption. P. Eilersen. Ugesk. læger 121:519-526 (April 2) 1959 (In Danish) [Copenhagen].

The malabsorption syndrome consists partly of symptoms with known etiology and well-defined pathoanatomic basis, partly of symptoms where etiology, pathogenesis, and pathoanatomic conditions are more uncertain. The term applied to the last-named cases is "primary malabsorption." Gluten-free diet, with avoidance of gluten of rye and wheat flour, is recommended. It can in many cases result in complete disappearance of the symptoms of primary malabsorption. The effect may not appear till late, and the diet must not be given up before 6 or 8 months. Adrenocortical steroids should be given only when the diet treatment does not give the desired result.

Myxedema as Complication in Pancreatogenic Steatorrhea. P. Eilersen. Ugesk. læger 121:526-528 (April 2) 1959 (In Danish) [Copenhagen].

The simultaneous occurrence of myxedema and steatorrhea seems to be unusual. In the course of a year a grave steatorrhea with resulting deficiency symptoms developed in a man, aged 57 years. The picture was complicated by a definite myxedema. Examination revealed pancreatogenic steatorrhea, and the course of the disease showed that all the symptoms, also the myxedema, could be explained as secondary to the pancreatogenic steatorrhea. After a month's treatment with pancreatin, protein, calcium, iron, and vitamins, the condition of the patient was miraculously improved. The treatment has lasted a year, and the patient continues free of symptoms.

Steatorrhea as Result of Diabetic Neuropathy in Gastrointestinal Canal. P. Eilersen. Ugesk. læger 121:530-532 (April 2) 1959 (In Danish) [Copenhagen].

A detailed report is given of 2 cases of steatorrhea and neuropathy in patients with grave diabetes. Chronic diarrhea as complication in diabetes has been described several times in the last 25 years. Especially characteristic are nocturnal watery diarrheas which occur when the diabetes has lasted a number of years. The intestinal symptoms are attributed to the results of visceral neuropathy.

This form of diarrhea is seen only in patients with other signs of a diabetic neuropathy which affects the autonomic nerves of the gastrointestinal tract.

Pyloric Ulcer with Special Reference to the Gastric Secretory Pattern.

R. W. Lopes, W. L. Palmer and J. B. Kirsner. Gastroenterology 36:790-795 (June) 1959 [Baltimore].

Of 1,076 patients with peptic ulcers seen by the authors in the course of 5 years, 60 (5.5%) were selected in whom the lesion seemed to be located roentgenologically in the pylorus or on either "slope" involving the pylorus. Of the 60 patients, 10 were not included in the statistics concerning gastric secretion, because the gastric secretory patterns were not available. Of the remaining 50 patients, 9 were women, between the ages of 44 and 78 years, and 41 were men, between the ages of 19 and more than 60 years; the greater number of patients were in the 5th and 6th decades, there being 15 patients in each group. Gastric secretory determinations were obtained from these 50 patients by collection of the secretion for one hour under basal conditions and by collection for a second hour after stimulation with 0.5 mg. of Histalog per kilogram of body weight.

Forty-seven (78.3%) of the 60 patients had typical ulcer distress; atypical pain patterns were present in 13 patients (21.7%). Nausea was observed in 18 patients (30%), and vomiting in 25 (41.6%). These findings suggested that there was no characteristic "pyloric syndrome." The gastric secretory patterns of the patients with pyloric ulcer were intermediate between those characteristic of gastric and duodenal ulcer. In the men, values of free hydrochloric acid ranged from 0 to 19 mEq. per hour in the basal study, and from 5 to 47 mEq. per hour after Histalog stimulation. In the women, basal values ranged from 0 to 7.4 mEq. per hour, and values after Histalog stimulation ranged from 1.9 to 15.5 mEq. per hour. The values in the female group were lower than in the male group, as in normal persons and in patients with gastric and duodenal ulcer. The importance of accurate localization of the pylorus and the use of definite terminology when referring to the pylorus are stressed.

The Clinical Significance of Blood Ammonia Levels in Laennec's Cirrhosis.

N. W. Chaikin and M. S. Konigsberg. Gastroenterology 36:785-789 (June) 1959 [Baltimore].

The authors studied the prognostic significance of variations in the blood ammonia levels and their relationship to protein intake in 73 patients with Laennec's cirrhosis, 27 of whom had cirrhosis with normal blood ammonia levels (group 1), 28 had cirrhosis with elevated blood ammonia levels and without neurological manifestations (group 2), and 18 had cirrhosis with neurological manifestations and elevated blood ammonia levels (group 3). Thirteen of the patients in group 1 remained on an unrestricted diet, and 14 were placed on a diet low in protein and high in carbohydrates. Most of the patients in group 2 were given a low-protein diet and vitamins; some of them were given a supplement of 15 Gm. of glutamic acid by mouth 3 times daily. The patients in group 3 were all given 25 Gm. of sodium potassium glutamate intravenously as an addition to 500 cc. of 5% dextrose in distilled water. As soon as the patients regained contact with their environment, 15 Gm. of glutamic acid was given orally 3 times daily. All the patients were placed on a diet low in protein and high in carbohydrates.

The results showed that the dietary regimen did not influence the clinical picture or the ammonia levels in the patients with cirrhosis in whom the blood ammonia levels were within normal range. In those patients with high blood ammonia levels but without neurological signs, a low-protein diet appreciably decreased the ammonia level and increased the survival rate, as compared with those patients who remained on an unrestricted protein intake. Patients with neurological manifestations and high blood ammonia levels also fared well with a low-protein diet in regard to the disappearance of the neurological signs and lowering of the ammonia levels. When glutamic acid was used as a supplement either orally or intravenously, the ammonia levels dropped more rapidly than when the patients were on a low-protein diet alone. High blood ammonia levels are clinically significant, both as therapeutic guides and from a prognostic point of view, whereas normal blood ammonia levels have no such significance.

Salmonellosis in Peru and the Secondary Complication of Human Bartonellosis or Carrión's Disease.

H. C. Arbulú and A. B. Soto. An. Fac. med. 41:685-702 (no. 4) 1958 (In Spanish) [Lima, Peru].

In a survey of salmonellosis in Peru (made in 1951-1957), the authors studied 4,654 cases of acute and chronic intestinal disorders and investigated the frequency of Salmonella and other intestinal pathogenic agents. This series included cases of meningitis associated with Sal. typhimurium in children, and of severe typhoid in dehydrated infants, observed at the same time that important epizootics occurred among domestic animals in Lima and adjoining areas. In the present investigation diagnoses were made by blood cultures and by studies of cerebrospinal fluid and feces, as well as material obtained at autopsies. Salmonellosis was found in 347 (7.7%) of the cases, sometimes with more than one strain, sometimes in association with Shigella or Staphylococcus organisms. The most frequent strain was Sal. typhimurium, although the trend in the last few years has been toward a marked decrease in the frequency of Salmonella organisms and an increase in the frequency of Shigella. The authors relate this change to the increasing use of antibiotics.

In the course of this investigation 9 new cases of complicated bartonellosis (Carrión's disease) were diagnosed. In all 9 patients the complicating infection was positively identified as salmonellosis, with Sal. typhimurium present in 4 of them. Patients with Carrión's disease (or verruga peruana, an autochthonous disease in Peru) become susceptible to salmonellosis of animal origin, which is a serious complication and may appear in the acute phase or at the beginning of or during convalescence. Infants too are susceptible, as was evidenced in this study. These findings point to the need for action against salmonellosis in Peru. Accurate laboratory and epidemiologic techniques should be used in fighting the disease.

SURGERY

Human Brain Changes in Cardiac Arrest. M. M. Mandel and R. G. Berry. Surg. Gynec. & Obst. 108:692-696 (June) 1959 [Chicago].

The authors describe observations on 2 women, aged 35 and 50 years, respectively, who experienced cardiac arrest. In the first case, the cardiac arrest was of 4 minutes' duration with a survival period of 27 hours, while the cardiac arrest, in the second instance, was of 8 minutes' duration with a survival period of 3 days. The cerebral changes in both cases exhibited a striking similarity but were more pronounced in the second case. The vulnerability of the cerebral cortex to acute anoxia is demonstrated by the changes in the occipital and frontal cortices. In these areas a laminar loss of cells was found, involving particularly laminas III and V, with the occipital cortex showing a greater degree of involvement in both cases. The calcarine area in the second case contained no normal-appearing neurons and exhibited dilated and proliferated blood vessels with an increased number of astrocytes and microglial cells in the cortex. The cerebellum was involved in both of the cases, showing a loss of Purkinje cells, as well as varying degrees of degeneration. Eosinophilic changes of the nucleus and cytoplasm were indicative of early anoxic changes. There was rarefaction necrosis of Bergmann's layer as well as an increase in glial elements. The molecular layer was prominent with microglia and astrocytes in the second case. The dentate nucleus was involved in both cases with loss of neurons and pallor of those that remained. The hippocampus was severely involved in case 2 with a marked loss of pyramidal cells in Sommer's sector. The basal ganglions in both cases and the pons in the second case revealed a diffuse loss of neurons throughout with dilated congested vessels.

These observations are of importance to the surgeon who is confronted with cardiac arrest during an operative procedure, for speed is essential in restoring circulation by cardiac massage. The crucial period for complete recovery is 3 minutes. With longer periods, selective involvement of the frontal lobe, occipital lobe, cerebellum, and hippocampus may occur, as described in these cases of cardiac arrest of more than 4 minutes' duration.

Indications and Contraindications to the Operative Treatment of Patent Ductus Arteriosus. F. H. Kutushev. Vestnik Khir. 82:29-36 (May) 1959 [Leningrad].

The author reports observations on 120 patients with patent ductus arteriosus, 102 of whom were subjected to ligation of the duct. There were 4 fatalities. Analysis of the late results suggests that patients below the age of 3 years should be operated on only if the patency of the duct has a deleterious influence upon the condition of the child. Best results from ligation were obtained in patients 3 to 15 years of age. Contraindications to the closure of the patent ductus arteriosus exist when complicated congenital malformations are present and the patency of the duct acquires a compensatory function. In some of the cases the closure of the duct may be done simultaneously with the surgical correction of other congenital anomalies. When a patent ductus is associated with a septal defect, the ligation has a favorable effect. The operative procedure on a patent ductus arteriosus in the presence of severe hypertension of the pulmonary circulation is particularly grave. However, operation can be successfully performed by a step-by-step narrowing of the lumen of the patent duct. A timely performed closure of the ductus arteriosus before the appearance of irreversible changes results in a good postoperative and late result.

Treatment of Malignant Edematous Exophthalmos by Implantation of the Pituitary with Yttrium 90: Report of Two Cases. G. M. Molinatti, F. Camanni and A. Pizzini. J. Clin. Endocrinol. 19:583-589 (May) 1959 [Springfield, Ill.].

Malignant edematous exophthalmos is generally attributed to excessive secretion of thyrotropin (TSH) or of a closely related material, called "exophthalmos-producing substance," by the pituitary. Exceptionally severe cases exist in which all forms of medical or roentgenologic treatment are unsuccessful, and progressive protrusion of the eyeballs, with consequent corneal and conjunctival changes, leads to blindness. The authors present the histories of 2 men, aged 61 and 47 years, respectively, who had malignant exophthalmos that proved refractory to the usual medical and roentgenologic therapy. They were treated by implantation of the pituitary with radioyttrium (Y^{90}). Prompt and marked improvement of the ocular symptoms occurred in both patients in association with normalization of thyroid function. These results have persisted in one case for at least 16 months after implantation; the other case was followed for only one month. No adrenocortical deficiency was observed. This effect of implantation of Y^{90} is interpreted as being due to selective radiobiological inhibition of the hyperactive pituitary cells which produce the thyrotropic hormone. In commenting on the selective inhibition of the cells that produce the thyrotropic hormone, the authors suggest that these cells, on account of their functional hyperactivity, could be more sensitive to irradiation than other cells.

Incidence of Metastasis in the Internal Mammary Chain in Operable Cancer of the Breast. E. Caceres. Surg. Gynec. & Obst. 108:715-720 (June) 1959 [Chicago].

The internal mammary lymph node chain was removed in 258 out of 261 women who were subjected to radical mastectomy for cancer by a surgical team in the Instituto Nacional de Enfermedades Neoplasicas, Lima, Peru. Data on the first 250 of these patients were tabulated and studied. The authors show that it is possible to perform a resection en bloc and in continuity of the breast, the contents of the axilla, and the internal mammary chain in an extrapleural manner. The operation described has not been followed by greater morbidity than the typical radical mastectomy. The operative mortality was less than 1%.

Only 92 (36.8%) of the patients were free from lymph node metastases. In 104 patients (41.6%) the axillary lymph nodes alone had metastases; in 48 (19.2%) both the axillary and the internal mammary lymph nodes were invaded; and in 6 (2.4%) the lymph nodes of the internal mammary chain alone were involved. Thus, the axillary lymph nodes were involved in 152 cases (60.8%), and the internal mammary chain nodes in 54 cases (21.6%). The study of the involvement of the internal mammary chain was extended to the first 4 intercostal spaces. The first intercostal space showed invasion by metastases in 37 of the 54 patients with internal mammary chain involvement. The greater incidence of metastases in this space in this series is presumably due to the resection of the first rib, permitting ligation of the internal mammary vessels almost at the upper edge of the first rib, and excision en bloc of the whole of the first intercostal space.

Whether or not radical mastectomy with resection of the internal mammary chain improves the results in the treatment of cancer of the breast cannot at present be affirmed. The author feels that the high incidence of metastases to the internal mammary chain in tumors located in the outer half of the breast (15.2%) justifies the extension of this type of operation to all mammary tumors, whatever their location. The operation should be carried out by experienced specialists.

Additional Contribution to the Utilization of the Internal Mammary Artery as the Organ of Revascularization of the Myocardium. F. Cataliotti. Minerva cardioangiol. 7:180-186 (April) 1959 (In Italian) [Turin, Italy].

This work concerns a series of 10 dogs which underwent a left internal mammary arteriocardiopexy for the purpose of studying surgical correction of diminished blood flow into the myocardium. The animals, after being anesthetized, were intubated with an endotracheal tube. The thorax was opened through the third intercostal space. The internal mammary artery was exposed and transplanted into the pericardium of the left ventricle, in which an incision had previously been made. Two grams of talc was spread over the pericardium. In order to produce a gradual degree of stenosis, cellophane was wrapped around the anterior descending branch of the coronary artery at 2 cm. from its origin. The transplanted internal mammary arteries were injected with an opaque substance to determine the presence of anastomoses from the arteriocardiopexy to coronary vessels.

Internal mammary arteriocardiopexy produced in most animals of this group anastomoses between the transplanted artery and the adjacent vascular area of the myocardium. Histological examinations revealed the presence of opaque material in the myocardial vasculature, which material had previously been injected into the mammary arteries. A satisfactory functional performance of the anastomotic channels between the systemic arteries and the coronary arteries was demonstrated on electrocardiographic examination. The results of this investigation are comparable to those of Litvak and Vineberg.

Comparative Observations on Operative Risks and Postoperative Course of Combined Valvulotomy for Mitral and Aortic Stenosis and of Aortic Valvulotomy Alone. R. Gentilli, E. De Giorgi and T. De Nunno. Minerva cardioangiol. 7:186-189 (April) 1959 (In Italian) [Turin, Italy].

The authors made a comparative study of operative risks and postoperative course in a series of 30 patients, divided into 2 equal groups; one group underwent a combined valvulotomy for mitral and aortic stenosis, and the other underwent aortic valvulotomy alone. The ages of the patients ranged from 7 to 52 years. There were 18 male and 12 female patients. A varying degree of calcification of the aortic valve and a difference in consistency of the myocardium of the left ventricle were the 2 most distinguishing pathological features between the 2 groups. There was a marked calcification of the aortic valve in 3 patients with aortic stenosis alone; the calcification was light and present in only one patient with both aortic and mitral stenosis. It was relatively easy to suture the incision of the ventricle in patients with mitral and aortic stenosis; this procedure was more difficult in patients with aortic stenosis alone.

The postoperative course in patients who underwent the combined operation was relatively uneventful, with no death recorded. The postoperative course in patients who underwent the operation for aortic stenosis alone was stormy, being characterized by the following single or combined symptoms: collapse, epistasis, and pleural effusion, requiring prolonged bed rest. There were 2 deaths in this subgroup. The authors conclude that the indications for combined valvulotomy for aortic and mitral stenosis are more favorable than those for valvulotomy for aortic stenosis alone in this series of patients.

Arterial Homografts in the Treatment of Peripheral Arterial Occlusions. L. E. Puech Leao, V. Khouri, J. Bueno Neto and A. G. Freitas Neto. Rev. paulista med. 54:348-356 (May) 1959 (In Portuguese) [São Paulo, Brazil].

Anatomic restoration of obstructed arteries is indicated whenever there is obstruction of any large artery and sympathectomy is insufficient to restore arterial flow in the muscles. The selection of patients for surgery must be based on the arteriographic findings. The prognosis is favorable when the obstruction involves only a segment of any large artery without impairing the permeability and free circulation above and below the segment obstructed. Arterial grafting is especially indicated in the cases of femoral obstruction which do not require manipulation of any important organ. Where there is obstruction in the aortic bifurcation, which calls for extensive laparotomy, the selection is much more restricted, especially for older patients or for those with generalized arteriosclerosis.

The department of surgery of the Faculty of Medicine, University of São Paulo, Brazil, has done intensive experimental studies with preservation of arterial grafts in alcohol. The 19 cases reported here represent the first surgical results obtained at the Hospital das Clínicas with this type of homograft. The 19 operations were performed between January and September of 1958. With the exception of one patient suffering from aortic-iliac chronic obstruction (Leriche's syndrome), all the transplantations were made for a femoral condition. Two patients had femoral wounds, one had thromboangiitis obliterans, and one was suffering from the sequels of embolism. The remaining 14 patients had femoral obstruction, with gangrene of the toes in 3 of them.

Fourteen patients recovered well. After an interval of 1 to 9 months after the operation, their grafts were functioning, and there were no symptoms of the vascular disorder for which they had been treated. In 5 patients the grafts did not function, and thrombosis occurred within 24 hours after the operation. In 2 cases the failure was attributed to errors in the surgical technique; these were the first patients in this series to be operated on. In the other 3 cases of failure, the indication for transplantation had been doubtful, for there was not enough free arterial circulation below the obstruction. In no case, however, was the patient worse than before surgery. The only death in this series occurred in a 79-year-old man and was not related to the operation. The patient died of cerebral thrombosis on the 11th postoperative day, although the graft was functioning and the arteries of the foot were pulsating during the whole postoperative period.

Adrenalectomy in Advanced Mammary Cancer. G. E. Block, A. B. Vial, J. D. McCarthy and others. Surg. Gynec. & Obst. 108:651-668 (June) 1959 [Chicago].

The authors point out that Huggins in 1951 had demonstrated that gratifying remissions could be obtained by removal of the adrenal glands in patients suffering from advanced mammary cancer. They themselves made studies on 27 patients who were subjected to adrenalectomy at the University of Michigan Hospital, Ann Arbor. They hoped to throw light on the physiological processes leading to remissions in these breast cancer patients and thereby to establish criteria for the selection of patients for adrenalectomy. Most patients were seen by the authors only after the diagnosis of advanced mammary cancer had been made. The majority of the patients had received some prior treatment for the breast lesions. The patients were observed before and after treatment in a weekly clinic conducted by the authors. No other significant treatment had been given for the mammary cancer within 6 weeks before the adrenalectomy. In all the patients who underwent adrenalectomy, the variable of ovarian function had been eliminated; 18 had undergone previous bilateral oophorectomy, 7 had been subjected to x-ray castration, and 2 of the patients were more than 18 years past the menopause. In this latter group, estrogen excretion studies indicated that what estrogen production remained was adrenal in origin and not ovarian.

The authors found that a rather random selection of patients for adrenalectomy will produce remissions in more than 40% of the patients. That this remission rate is real and worthwhile is demonstrated by the fact that many remissions were months and years in duration. The remission time alone (including patients who have not yet run the full course of their remission) was twice that of the total life expectancy of the group in which remissions were not achieved. Since this is an eventually fatal disease, the treatment is one of palliation and not of cure. The nature of adrenalectomy is such that, when success is not achieved, the surgeon and the patient are not left with a situation that remains in status quo. Instead, they are confronted with induced Addison's disease in the face of an advancing lethal neoplasm. Therefore, the authors feel that they can recommend adrenalectomy only for those patients who fulfill most of the following criteria: (1) tumor not involving the liver; (2) previous remission from oophorectomy; (3) high estrogen excretion; (4) "middle age" (preferably the 50's); and (5) prolonged duration of disease (more than 3 years). When considering the patient for adrenalectomy, all these facts must be considered individually and collectively.

Anatomicosurgical Contribution to the Systematization of New Surgical Techniques for the Decompression of Portal Circulation in Humans. F. Cataliotti and M. Bazan. Minerva chir. 14:427-432 (April 30) 1959 (In Italian) [Turin, Italy].

The authors carried out an experimental study for relief of portal hypertension in humans by connecting the vascular areas of 2 organs in the following 4 combinations: stomach-liver, spleen-liver, spleen-kidney, and kidney-descending colon. After performing a laparotomy, the organs were held together by making a continuous row of silk sutures on each organ. The sutures were tied before closing the abdomen. First method: Capsule of the lower surface of the liver lobe was connected with the serosa of the gastric wall at the edge of contact between the 2 organs. Second method: Capsule of the upper apex of the spleen was sutured to the capsule of the lower surface of the left liver lobe. Third method: Capsule of the lower apex of the spleen was sutured to the capsule of the upper apex of the kidney. Fourth method: A longitudinal incision of the peritoneum and a vertical incision in the serosa of the descending colon were performed, and the edges around the incision united by sutures. The latter procedure left a unique breach open; the external edge of the breach was then sutured to the capsule of the upper surface of the kidney. The organs were dusted with talc powder before ligating the sutures.

The results of this investigation were good. The surgical techniques for the decompression of portal circulation may be recommended, because both involve only a light surgical trauma and utilize an initial portal hypertension which facilitates creation of anastomotic channels. A roentgenologic and functional examination of the portal circulation should precede the operation in order to establish the optimum level of the derivation vessels. The spleen should not be used for this procedure if it is enlarged.

The Misuse of Antibacterials in Inguinal Herniorrhaphy. R. S. Myers. Surg. Gynec. & Obst. 108:721-725 (June) 1959 [Chicago].

The development of antibiotic-resistant bacteria, which is one of the chief causes of hospital infections, has been hastened by the unnecessary use of antibiotics in patients who have had no proved infection. Simple or uncomplicated inguinal hernia, in which there is no incarceration or strangulation of the intestine or other abdominal contents, is one condition in which infection is not expected to occur after surgical repair, provided that adequate aseptic surgical technique has been followed and the patients have been properly selected and prepared. This paper is concerned with a critical evaluation of the use of antibacterials in 1,536 inguinal herniorrhaphies, performed in 24 community hospitals located in 7 states and participating in the Medical Audit Program, developed by the American College of Surgeons and the Commission on Professional and Hospital Activities. This group of hospitals is above average in its attempts to observe high standards of patient care. The patients were evaluated by the medical staff of each hospital during the second quarter of 1958, and their impressions, which were recorded on standard Medical Audit check sheets, were subsequently transferred to punched cards and processed by business machines. Analysis of the resultant statistics provides the basis of this critique.

A diagram, which shows the percentage of inguinal herniorrhaphy patients given antibacterials in each of the 24 hospitals, reveals wide variation between hospitals; the range extends from 100 to 9.2%. There were 596 (or 38.2%) of the 1,536 patients who received antibacterials. It was found that 421 (or 74%) of the 569 patients with simple inguinal hernias receiving antibacterials received these drugs needlessly, that is for prophylaxis. Moreover, the drugs given in most cases, penicillin, streptomycin, and the tetracyclines, are probably without therapeutic value in the prevention of staphylococcic infections which are being encountered presently in hospitals. Such misuse of antibacterials not only exposes patients needlessly to the dangers of serious and even fatal reactions, but it also wastes much money and nurses' time.

If the 421 patients received the minimum of one dose a day for 5.1 days, then they received a total of 2,147 unnecessary doses. If the average cost to the patient for one dose of antibacterials is set at the low figure of 50 cents, and if these figures, together with the estimated time expenditure by nurses of 3 minutes per dose, are projected into the 5,546 general hospitals in the United States, it would mean a minimum of $247,000 of wasted money and 25,000 wasted nurse hours involved in the dispensing of prophylactic antibacterials needlessly to patients undergoing this one operation (inguinal herniorrhaphy) during the period of one year.

Treatment of Cancer of Rectum in Copenhagen District Hospital in Gentofte. O. Kapel. Nord. med. 61:689-691 (April 30) 1959 (In Danish) [Stockholm].

The cases of cancer of the rectum treated from 1946 through 1954 are grouped as cancer of the rectum and cancer of the rectosigmoid. In many cases from 6 months to 4 years elapsed before hospital treatment. An extended Lockhardt-Mummery operative method (abdominoperineal extirpation in 2 sessions) was applied in 65 cases of cancer of the rectum. From 1946 to 1950, 34 patients were operated on by this procedure, with 3 deaths; 21 patients were living from 3½ to 6 years after the operation; 19, after 5 years; and 9, after 10 years. From 1950 to 1954, 31 patients were operated on by the method, with one postoperative death from pulmonary embolism; 19 patients were living from 3½ to 6 years after the operation. On abdominoperineal operation, performed on 11 patients, 3 deaths occurred; 4 patients died after 1 or 2 years; 5 patients are living from 3 to 7 years after the operation. Three gravely affected obese patients were operated on by Hartmann's method; 2 patients died, and 1 is living after 8 years. Perineoabdominal extirpation was done in 8 patients, with 3 deaths from postoperative ileus, but the late results did not equal those after the Lockhardt-Mummery method. The extended Lockhardt-Mummery operation has given the best immediate and the best late results.

Of the 37 cases of cancer of the rectosigmoid, 26 were operable. Nineteen patients were operated on by anterior resection, with one death. Only 9 patients are living after periods of over 1 to 10 years; the others died of local recurrence or distal metastases. Hartmann's operation was employed in 7 cases of rectosigmoid cancer, with one postoperative death; 3 patients died of cancer, and only 3 are living from 3 to 7 years after operation. It is thought that more cases of rectosigmoid cancer should be included in the established operative methods applied in rectal cancer if the principle of radical removal of mesorectum with mesosigmoid sufficiently high is followed. Anterior resection should be reserved for especially suitable cases and for patients who do not consent to colostomy.

NEUROLOGY & PSYCHIATRY

Inclusion-Body Encephalitides. K. Weisse and W. Krücke. German M. Month. 4:147-150 (May) 1959 (In English) [Stuttgart, Germany].

A group of encephalitic disorders of varying duration but with constant clinical and pathological characteristics, including the presence of acidophilic nuclear inclusion-bodies in neurons and oligodendroglia, may be differentiated from the great number of so-called atypical encephalitic diseases. This group constitutes a new type which should be added to the encephalitic disorders. Although there can be several etiological factors as in the other types of encephalitis, the fact that the herpes virus has been isolated from the cingulate gyrus at autopsy in a patient representing a typical case of the new type of encephalitis indicates that infection with the herpes or related viruses may be of greater importance than previously assumed. The task of further investigation must be to recognize this entity from clinical signs referable to the anatomic areas known to be involved and to attempt to isolate the virus from these areas at autopsy. The described histological characteristics must be searched for and their relation to the demyelinating diseases clarified.

Leptospiral Meningitis. S. Saslaw and E. D. Swiss. A. M. A. Arch. Int. Med. 103:876-885 (June) 1959 [Chicago].

The authors report on 10 patients with leptospiral meningitis admitted to the Ohio State University Hospital, Columbus, between 1954 and 1958. Eight patients had the anicteric form and only one patient the icteric form of leptospirosis. One of the 8 patients died. The patients presented central nervous system manifestations, which varied from mild meningeal irritation to coma. Cerebrospinal fluid findings in leptospirosis are not diagnostic. The findings in this group varied from a normal fluid early in the course of the disease to mild pleocytosis and a mild increase in protein later. Sugar and chloride levels usually remained within normal limits, although there was a temporary depression of spinal fluid sugar in 3 patients. These findings plus the clinical picture of meningeal irritation lead to the consideration of a viral infection of the central nervous system, such as viral encephalitis or poliomyelitis, or tuberculous meningitis when the sugar is depressed.

Examination of the formed elements of the blood aids little in the diagnosis of leptospirosis, since there may be no change in the white blood cell count or a moderate leukocytosis. Clinical characteristics of leptospirosis appeared to be the sudden onset of the illness, severe myalgia, conjunctival injection, and fever. Macular or maculopapular eruption, as observed in one patient, is not uncommon. The rash at times may assume a petechial character. All the patients had negative findings by virus isolation and viral serologic methods. Correct diagnosis of leptospirosis relies to a great extent on leptospiral agglutination tests. Evaluation of serial blood samples with a rising titer is the best evidence for present infection. Treatment of leptospirosis leaves much to be desired. A very limited number of patients appear to have improved to some extent after treatment with penicillin, chlortetracycline, or oxytetracycline. The authors conclude that, if any advancement in the clinical management of this disease is to be made, early and accurate diagnosis must be accomplished.

Leptospiral Meningitis. R. S. Diaz-Rivera, F. Ramos-Morales, A. F. Benenson and others. A. M. A. Arch. Int. Med. 103:886-896 (June) 1959 [Chicago].

The authors present the most salient clinical features of leptospiral meningitis observed in 29 men and 11 women, their ages ranging from 7 to 58 years, who were indigents of the San Juan metropolitan area. The patients lived in areas where rats abounded and where water pollution by the excrements of these rodents was possible. The incubation period varied from 7 to 14 days. The onset of the disease was acute and explosive, characterized by chills of variable intensity, a rapidly rising fever with prostration, severe general malaise, intense headache, and muscle aches and pains. Nausea and vomiting were recorded in most instances. Burning of the eyes with photophobia and slight lacrimation was a predominant symptom. A variable limitation of urinary output was frequently observed. Pharyngitis was observed among those who had nausea and vomiting. Hematemesis, leading to shock and death on the 8th day of illness, was observed once. Jaundice appeared during the first week of illness in 20 patients with maximum serum bilirubin values of 2 to 41 mg., and it subsided within 4 to 50 days. Of the 20 patients with jaundice, 13 presented central nervous system manifestations, and of the 20 patients without jaundice, 8 had central nervous system manifestations.

The pathogenesis of the central nervous system manifestations may be governed by various factors, including the diffuse or focal pathological alterations attributed to the direct or indirect effect of the Leptospira organisms: diffuse vascular damage, disturbances in electrolyte balance, intense hepatic alterations, or renal failure. Spinal fluid alterations are of no apparent prognostic value. In some instances the meningeal manifestations may appear as the most dominant feature of the disease, either prior to the onset of jaundice or among the patients without jaundice. These phenomena call for a refined diagnostic accuracy and an increased level of suspicion of the disease. The examination of the spinal fluid in the light of the clinical picture may aid in the establishment of the diagnosis of the disease through isolation of the Leptospira organisms. However, a bilirubin-tinged spinal fluid is of limited diagnostic value, since a clear fluid is the rule even in the presence of high serum bilirubin levels.

The pathogenesis of xanthochromia of the spinal fluid in classical Weil's disease remains unexplained. It may be governed by an increased capillary and meningeal permeability from either the direct effect of the Leptospira organisms or the complicating renal failure. It is emphasized that the anicteric form of leptospirosis [illegible] at times indistinguishable from other acute infectious diseases, mainly severe influenza without prominent signs of an acute respiratory infection. Since most of these may be accompanied by symptoms suggesting either meningitis or encephalitis, the final diagnosis must depend on laboratory confirmation. The evaluation of the extent of the cerebral and meningeal involvement in leptospirosis properly belongs to the pathologist.

Intracranial Aneurysms: Methods of Treatment: Value of Hypothermia in the Surgical Approach. E. Alexander Jr., C. H. Davis and N. C. Kester. A. M. A. Arch. Neurol. & Psychiat. 81:684-692 (June) 1959 [Chicago].

The authors report on various methods of treatment used over the past 9 years in 115 patients with intracranial aneurysms in the section of neurosurgery, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C. The management of these patients is divided into 5 categories: surgery; cervical carotid ligation; intracranial surgery without hypotension or hypothermia; intracranial surgery with systemic hypotension; and intracranial surgery with hypothermia. The evaluation of the mortality for each method reaffirmed the important value of the patient's pretreatment status. Several patients of each group who died were in such critical condition before the treatment that probably they would not have done well with any treatment. Elimination of those patients yields a comparison of mortality rates of the various treatments as follows: 44% of the patients died who were not subjected to surgery; 25% died after unmodified intracranial surgery; 43% died after intracranial surgery with hypotension; and 11% died after intracranial surgery with hypothermia. Among the patients who were not operated on, only those in good or fairly good condition on admission made an excellent or a good recovery. Among the patients who were treated surgically, however, there were several—especially in the group treated under hypothermia—who were in poor or fair preoperative condition, who made an excellent or good recovery.

The choice of operative procedure for patients to be treated by surgery seems to lie between cervical ligation of the carotid artery and intracranial approach under hypothermia. The mortality of cervical ligation of the carotid artery is relatively low, and many excellent results can be obtained by this method. This procedure does not obliterate the aneurysm and, therefore, has the disadvantage of leaving the patient liable to a recurrent rupture at a later date. In patients with very large aneurysms, or in whom anesthesia and hypothermia are contraindicated, carotid ligation may be the method of choice. The mortality of direct approach under hypothermia can be kept as low as, or lower than, that of carotid artery ligation. In such circumstances the complete obliteration of the aneurysm is a real advantage. Familiarity with this technique will give the surgeon a facility in the management of intracranial aneurysms, which will produce results superior to those of any other method now available.

PEDIATRICS

Fatal Cardiovascular Collapse of Infants Receiving Large Amounts of Chloramphenicol. J. M. Sutherland. A. M. A. J. Dis. Child. 97:761-767 (June) 1959 [Chicago].

The author reports on 3 newborn infants, 2 boys and 1 girl, who died between the 5th and 7th days of age of peripheral vascular collapse occurring after the administration of large doses of chloramphenicol which was given intramuscularly to 2 of the infants and orally to the 3rd one. Of the 3 deaths, one occurred after the administration of 220 mg. of chloramphenicol per kilogram of body weight per day for 60 hours; one death occurred after the administration of 230 mg. per kilogram per day for 72 hours; and one death occurred after the administration of 50 mg. per kilogram per day for 56 hours and 10 hours after a single inadvertent oral dose of 400 mg. The doses of chloramphenicol given to these infants were significantly larger than those usually administered. The absence of autopsy findings indicating any but minimal or subsiding infection in these 3 infants increases the likelihood that their deaths resulted from adverse drug action, although a clinical picture of vasomotor collapse and hypothermia may be associated terminally with overwhelming infections in the newborn infant.

The adverse effect of doses of chloramphenicol of one and a half recommended amounts might result from any one or more of the following factors, some of which have been suggested previously: (1) rapid destruction of bacteria and release of endotoxin; (2) drug hypersensitivity; (3) methemoglobin production; (4) overgrowth of resistant organisms; (5) toxic alternate metabolites; (6) efficient absorption and/or poor elimination of drug; (7) hypoglycemia; (8) disturbed carbohydrate utilization; and (9) adverse effect on autonomic nervous system. The observations in the 3 patients do not make it possible to ascribe an adverse effect to the drug in recommended amounts. The 3 deaths are reported in the hope of stimulating publication of the observations by other workers, which may lead to less tentative conclusions than are possible on the basis of a few uncontrolled case reports.

Congenital Asymmetry, Short Stature, and Elevated Urinary Gonadotropin. H. K. Silver. A. M. A. J. Dis. Child 97:768-773 (June) 1959 [Chicago].

The author reports 2 cases of the syndrome of congenital hemihypertrophy, shortness of stature, and elevated levels of urinary gonadotropins in a 8½-year-old Negro boy and a 6-month-old white boy. Three similar cases had been previously reported by the author in cooperation with other workers, and an abstract of the report on 2 of these cases had appeared in THE JOURNAL (154:367 [Jan. 23] 1954). The Negro boy had asymmetry of the spine, shortness of stature, an abnormally small birth weight despite a history of having been born at full term (the pregnancy, however, being complicated by the removal of a 3-lb. "fibroid of the ovary" during the 4th month), delayed epiphysial maturation, incurved little fingers, and elevated gonadotropins for the patient's age. The white boy had shortness of stature, a difference in size of the 2 legs, a drawing down of the corners of the mouth, a small birth weight despite a history of being born 2 weeks after the expected day of delivery, a single café-au-lait spot, nonpitting swelling of the dorsa of both hands and feet, incurving of the 5th fingers, moderate cubitus valgus, a slight increase in the amount of skin on the back of the neck, and cryptorchidism.

A review of these 2 cases and of the 3 previously reported revealed that the urinary gonadotropin levels were elevated for the age in all 4 patients in whom this test could be performed, being positive at 4.5, 5.0, 5.0, and 35.2 mouse [uterine] units (M. U.) respectively. All normal children who have been tested have been found to excrete less than 2 M. U. per 24 hours. No correlation seemed to exist between the syndrome as seen in these 5 patients and any of the following factors: sex, race, family history, mental development, dentition, or genital development. The structure of the skeleton was normal on roentgenograms obtained from all the patients. The author suggests that the pathogenesis of the condition described may be similar to that which occurs in patients with gonadal dysgenesis. In the 6-month-old boy, the findings of slight webbing of the neck, moderate cubitus valgus, swelling of the dorsa of the hands and feet, and wide spacing of the nipples were all suggestive of gonadal dysgenesis. However, exploratory laparotomy was not performed, and assay of urine for gonadotropins could not be carried out.

Pseudohypo-Adrenalocorticism: Renal Sodium Loss, Hyponatremia, and Hyperkalemia Due to a Renal Tubular Insensitivity to Mineralocorticoids. G. N. Donnell, N. Litman and M. Roldan. A. M. A. J. Dis. Child. 97:813-828 (June) 1959 [Chicago].

The authors report on a 7-month-old boy who was admitted to the Childrens Hospital of Los Angeles for complaints of failure to thrive and chronic eczema. Chronic dehydration, hyperpotassemia, hyponatremia, and pronounced somatic retardation suggested adrenal insufficiency. Paradoxically, the circulatory 17-hydroxycorticosteroid values were normal, and stimulation with corticotropin (ACTH) caused a normal response. The second and third hospitalizations, at 11½ and 23 months of age, lasted 9 and 2 months, respectively, and studies carried out during these hospital stays revealed that a salt-losing renal tubular defect was responsible for the patient's symptoms and that the defect was manifested by a renal refractoriness to aldosterone. The concept of renal tubular insensitivity to mineralocorticoids was further strengthened by the demonstration of the inability to induce sodium conservation by the administration of desoxycorticosterone acetate, fludrocortisone, and 2-methyl-9-alpha-fluorohydrocortisone. Initially, large loads of salt were required to correct the serum electrolytes. Subsequently the child was able to maintain electrolyte balance on standard diet, but could not tolerate salt deprivation.

Intralobar Bronchopulmonary Sequestration in Children: Diagnosis by Intrathoracic Aortography. A. P. Simopoulos, D. J. Rosenblum, H. Mazumdar and B. Kiely. A. M. A. J. Dis. Child. 97:796-804 (June) 1959 [Chicago].

The authors report on a 6-year-old girl and a 6-year-old boy with intralobar bronchopulmonary sequestration, a congenital pulmonary disease in which a portion of an otherwise normal lobe has no connection with the bronchial tree or pulmonary arterial circulation, and receives its arterial supply from anomalous branches of the aorta. Both patients had been admitted to hospitals for recurrent infection. A chest roentgenogram of the girl showed a large area of consolidation in the left lower lobe which appeared rounded in the posteroanterior view, but the borders of which were not well defined in the lateral view. A chest roentgenogram of the boy showed in the region of the left lower lobe an infiltration and multiple cystic areas, some of which had air fluid levels within them. Bronchograms in both patients revealed displacement of the bronchi and failure to fill any bronchi in the region of sequestration.

Intrathoracic aortography was performed in both patients with the aid of local anesthesia and with the use of from 0.67 to 0.75 cc. per kilogram of 70% sodium acetrizoate as contrast medium. A tortuous vessel arising from the lower part of the thoracic aorta and entering a cystic area in the left lower lobe was shown in the girl. A large anomalous vessel arising from the lower portion of the thoracic aorta and entering the area of sequestration was revealed in the boy. Resection of the posterior basal segment was performed in both patients. The postoperative course of the girl was complicated by hydropneumothorax or hemopneumothorax, which resorbed spontaneously, and the patient was discharged on the 24th postoperative day. The postoperative course of the boy was satisfactory, and he was discharged on the 15th postoperative day.

Intralobar bronchopulmonary sequestration causes chronic and recurrent infection and requires surgical removal. The condition can be identified by the history and appearance of the lung on plain chest roentgenograms and by bronchograms or by the aortographic demonstration of the abnormal systemic artery which supplies it. Pediatricians should consider this diagnosis in patients with localized chronic or recurrent pulmonary disease.

Poliomyelitis Under One Year of Age: Clinical and Laboratory Findings in a Group of 529 Patients with Poliomyelitis Younger than One Year of Age. D. Levy and W. Falk. A. M. A. J. Dis. Child. 97:829-838 (June) 1959 [Chicago].

The authors report on 529 infants, aged less than one year, with poliomyelitis who were treated at the Rambam Government Hospital in Haifa during the first 7 years of a poliomyelitis epidemic in Israel (1950-1956). Of the 529 infants, 25 (4.7%) were less than 3 months old, 108 (20.4%) were between the ages of 3 and 6 months, and 396 (74.9%) were older than 6 months. The clinical and laboratory findings in this group of patients are described. The appearance of muscular weakness, signs of bulbar or cranial nerve involvement, or encephalopathy during the first 3 days of illness were twice as frequent among patients with facial, encephalitic, or bulbar type of poliomyelitis as among patients with spinal nerve involvement. Whereas this may be a consequence of higher vulnerability of cerebellar and medullary nerve tissue during this period of life, it must be borne in mind that signs of involvement of these centers are much more noticeable than weakness of limb or body muscle in an infant. Definite signs of meningeal irritation were elicited on the lips and mouth in order to prevent accidents of invagination and possible malignant degeneration by constant surveillance and preventive operations as indicated; (2) a careful examination of the mouth in patients with an acute abdominal disturbance, because it may lead to an accurate etiological diagnosis of intestinal occlusion, which, in the Peutz syndrome, is always due to polypoid invagination; and (3) restraint in giving a patient with the Peutz syndrome too somber a prognosis, even though the histological structure of the tumors suggests cancer.

OTOLARYNGOLOGY

Bronchoscopy Under General Anesthesia in Children Aged 4 to 11 Years: Study of 422 Endobronchial Explorations Carried out by This Method in a Specialized Preventorium. G. Jamet, J. Moraine, A. Gladu and H. Petithomme. Rev. tuberc., Paris 23:231-247 (Feb.-March) 1959 (In French) [Paris].

The difficulties accompanying bronchoscopy in children, aged 4 to 11 years, led the authors to abandon the use of local anesthesia for this procedure in children of this age-group and to replace it with general anesthesia. The intravenous route is used exclusively, because inhalation methods of anesthesia proved unsatisfactory and ill-adapted to a procedure of this type. The anesthetist should confine himself to supplying oxygen alone by the aerial route. The duration of bronchoscopy is extremely variable (from 8 to 35 minutes in the authors' series); consequently, it is important to have anesthesia that can be managed easily, i. e., capable of being prolonged as needed but immediately reversible when the examination is finished. A thiobarbiturate (Nesdonal) is used for induction, while the rest of the anesthesia is secured by a curarizing drug, succinylcholine iodide, which is given in an extemporaneous solution of 10 mg. per milliliter. The doses vary with the weight of the subject. Additional injections can be given, if needed, at constantly increasing intervals in smaller and smaller doses.

No serious accident has occurred in any of the 451 bronchoscopies carried out under general anesthesia by the authors, 422 of which were in the children in this series; the few incidents noted were all minor in character and were far outweighed by the advantages of the procedure. General anesthesia enables the bronchoscopist not only to make as detailed and thorough a study of the patients' endobronchial condition in children, aged 4 to 11, as in adolescents and adults, but also to apply direct therapeutic treatment to the lymph-node lesions of a primary infection and so to provoke their involution. The presence of foreign bodies in the bronchi, quite apart from tuberculous infection, is a formal indication for bronchoscopy under general anesthesia in children of this age-group.

A somewhat more complicated bronchoscopic table is required when the examination is performed with the patient under general anesthesia than when it is carried out under local anesthesia only. The number of medical assistants must also be larger, and both the bronchoscopist and the anesthetist must be specially qualified. The anesthetist should, if possible, be experienced in giving an anesthetic for thoracic surgery and should have had practice in the use of curare. Perfect teamwork is required, so that the procedure can only be used in specialized services with experienced workers. The anesthetist should take advantage of the time spent by the bronchoscopist in cleaning and changing lenses, for example, to assure the oxygenation of the patient, and, if the procedure is prolonged, he should request an opportunity to oxygenate the patient as needed. Finally, the tube should not be withdrawn until the child has shown definite signs of waking. Bronchoscopy under general anesthesia with a combination of Nesdonal and curare has proved entirely harmless when these conditions are observed.

Malignant Tumors in Middle Ear and Mastoid Process. H. Sørensen. Ugesk. læger 121:785-789 (May 14) 1959 (In Danish) [Copenhagen].

Cancer in the middle ear and mastoid process is a grave but not hopeless disease, provided that the diagnosis is made before the tumor has reached too great an extent. From 1939 to 1953, 13 patients (7 men, 6 women), aged from 33 to 75 years, were admitted to the Radium Station and the Municipal Hospital in Aarhus, Denmark, under the diagnosis of cancer of the middle ear and/or mastoid process. In 11 cases the cancer developed during a chronic otitis; only 2 patients had not previously had discharge from the ears. In 7 cases the discharge was bloody. The frequent occurrence of chronic otitis in the patients supports the conception of the etiological significance of long-continued suppuration and stresses the importance of careful observation of patients with this disease. Cancer of the middle ear metastasizes late. The results of treatment show radical excision combined with radiotherapy to be a valuable means of treatment. In cases in which full recovery has not been attained, the patients' suffering has been relieved by a not especially mutilating intervention. Twelve patients were treated. The histological diagnosis was spinocellular carcinoma in 9 cases, basocellular carcinoma in 2, and sarcoma in 1. Five patients have been free from recurrence for more than 5 years; 1 patient died without sign of recurrence after 2½ years; 6 patients died of recurrence of the tumor.

forms, later closing of the anlage and atrophy of the muscles favor the development of the anomaly on the left, just as they do that of hernia. Acquired eventration due to phrenic paralysis is also found more often on the left side than on the right, because the liver serves as a solid barrier that interferes with the twofold factor of abdominal thrust and thoracic aspiration.

The clinical picture is variable, depending, as it does, on the effect of the eventration on the lungs, heart, and digestive apparatus. Three clinical forms may be found in children: early, in which the symptoms are apparent at or within a few hours after birth; patent, in which they usually appear between the ages of 6 and 11 years; and latent, in which obvious symptoms are lacking and the children have no more than a special susceptibility to common respiratory infections and a moderate degree of debility. Immediate surgical treatment is usually required to prevent a fatal outcome in the early forms in which cyanosis, accompanied by dyspnea or polypnea, is the dominant symptom; the few infants who survive without operation are subject to more or less severe digestive disturbances. An attitude of prudent watchfulness, on the other hand, may be maintained in the early forms characterized only by slight polypnea or mild digestive disturbances that do not interfere with the infant's growth, because they are generally well tolerated.

The symptoms of the patent forms, consisting of pain in the epigastrium or left hypochondrium, often occurring after eating and relieved by vomiting, usually interfere with normal living and affect the patient's general condition or gastrointestinal status to such an extent that operation is advisable. A latent eventration, however, which is discovered by accident in a child who is in perfect health or who has only a few discrete symptoms not affecting his general condition, should not be taken as justification for an operation.

The various methods by which diaphragmatic eventration can be surgically corrected are discussed in the light of published opinions and the authors' own experience. Three of their patients were successfully operated on; one was lost to follow-up before treatment was decided on; and in the remaining 6, in whom the eventration was more or less well tolerated, operation was not advised.

Visceral Polyposis and Cutaneomucosal Melanin Pigmentation (Peutz Syndrome). A. Mégevand. Arch. franç. pédiat. 16:353-361 (no. 3) 1959 (In French) [Paris].

Diffuse intestinal polyposis, predominating in the small intestine but occasionally extending to the stomach and the large intestine as far as the rectum, and an abnormal melanin pigmentation of the lips and labial mucosa, often accompanied by freckles, are always associated in the Peutz syndrome. All these characteristic aspects of the syndrome were present in the case of a 9-year-old boy reported on by the author. His first attack of violent abdominal pain, followed by bilious vomiting, occurred when he was 8½ years old. His history up to that time had been fairly normal in pattern, the only notable illnesses having been mumps at the age of 4 years and chickenpox and measles at the age of 8. The physician consulted during the initial abdominal disturbance, which lasted 5 days, spoke of an acetone crisis and anemia. Treatment to correct the anemia was started several weeks later at a clinic to which the child, now fully recovered from the abdominal disturbance, had been brought. An appendectomy was considered but decided against as untimely.

The following year was uneventful. The child, cured of his anemia, was perfectly well until December, when he had a sudden short attack of abdominal pain with one episode of vomiting. One week later, severe pain necessitating hospitalization recurred. A diagnosis of intestinal obstruction was made and confirmed at operation, during which a double jejunojejunal invagination was found. Two tumors, about 70 cm. apart, in the lumen of the small intestine formed the starting point of this invagination, making it necessary to remove about 105 cm. of the intestine. The postoperative period was uneventful, and in about 3 weeks anemia, which had recurred, disappeared spontaneously. Several subsequent follow-ups showed the boy to be in perfect health; he was well developed and not anemic, but the freckles and melanin pigmentation of his lips and buccal mucosa, which his mother said had first appeared at the age of 2 or 3 years, were more pronounced than they had been at the time of the first preoperative examination.

Investigation of the patient's family brought several interesting facts to light. 1. His mother had the same type of pigmentation on the labial mucosa, and she had twice been operated on, once for invagination of the small intestine and once for multiple polyposis of the small intestine, believed at the time to be cancerous. She recovered rapidly after the second operation and has since enjoyed perfect health. 2. A maternal aunt was operated on for nasal polyps at the age of 20 years, but was said not to have the characteristic pigmentation. 3. The patient's maternal grandfather had died of gastric carcinoma, but whether the tumor was a polyp that had undergone malignant degeneration is not known. 4. One uncle had had a kidney operation and was said to have had freckles; another uncle had very many freckles but no melanin spots.

Awareness of this syndrome should lead to (1) a systematic search for intestinal polyps in a child or an adult with the characteristic pigmented spots on the lips and mouth in order to prevent accidents of invagination and possible malignant degeneration by constant surveillance and preventive operations as indicated; (2) a careful examination of the mouth in patients with an acute abdominal disturbance, because it may lead to an accurate etiological diagnosis of intestinal occlusion, which, in the Peutz syndrome, is always due to polypoid invagination; and (3) restraint in giving a patient with the Peutz syndrome too somber a prognosis, even though the histological structure of the tumors suggests cancer.

OTOLARYNGOLOGY

Bronchoscopy Under General Anesthesia in Children Aged 4 to 11 Years: Study of 422 Endobronchial Explorations Carried out by This Method in a Specialized Preventorium. G. Jamet, J. Moraine, A. Gladu and H. Petithomme. Rev. tuberc., Paris 23:231-247 (Feb.-March) 1959 (In French) [Paris].

The difficulties accompanying bronchoscopy in children, aged 4 to 11 years, led the authors to abandon the use of local anesthesia for this procedure in children of this age-group and to replace it with general anesthesia. The intravenous route is used exclusively, because inhalation methods of anesthesia proved unsatisfactory and ill-adapted to a procedure of this type. The anesthetist should confine himself to supplying oxygen alone by the aerial route. The duration of bronchoscopy is extremely variable (from 8 to 35 minutes in the authors' series); consequently, it is important to have anesthesia that can be managed easily, i. e., capable of being prolonged as needed but immediately reversible when the examination is finished. A thiobarbiturate (Nesdonal) is used for induction, while the rest of the anesthesia is secured by a curarizing drug, succinylcholine iodide, which is given in an extemporaneous solution of 10 mg. per milliliter. The doses vary with the weight of the subject. Additional injections can be given, if needed, at constantly increasing intervals in smaller and smaller doses.

No serious accident has occurred in any of the 451 bronchoscopies carried out under general anesthesia by the authors, 422 of which were in the children in this series; the few incidents noted were all minor in character and were far outweighed by the advantages of the procedure. General anesthesia enables the bronchoscopist not only to make as detailed and thorough a study of the patients' endobronchial condition in children, aged 4 to 11, as in adolescents and adults, but also to apply direct therapeutic treatment to the lymph-node lesions of a primary infection and so to provoke their involution. The presence of foreign bodies in the bronchi, quite apart from tuberculous infection, is a formal indication for bronchoscopy under general anesthesia in children of this age-group.

A somewhat more complicated bronchoscopic table is required when the examination is performed with the patient under general anesthesia than when it is carried out under local anesthesia only. The number of medical assistants must also be larger, and both the bronchoscopist and the anesthetist must be specially qualified. The anesthetist should, if possible, be experienced in giving an anesthetic for thoracic surgery and should have had practice in the use of curare. Perfect teamwork is required, so that the procedure can only be used in specialized services with experienced workers. The anesthetist should take advantage of the time spent by the bronchoscopist in cleaning and changing lenses, for example, to assure the oxygenation of the patient, and, if the procedure is prolonged, he should request an opportunity to oxygenate the patient as needed. Finally, the tube should not be withdrawn until the child has shown definite signs of waking. Bronchoscopy under general anesthesia with a combination of Nesdonal and curare has proved entirely harmless when these conditions are observed.

Malignant Tumors in Middle Ear and Mastoid Process. H. Sørensen. Ugesk. læger 121:785-789 (May 14) 1959 (In Danish) [Copenhagen].

Cancer in the middle ear and mastoid process is a grave but not hopeless disease, provided that the diagnosis is made before the tumor has reached too great an extent. From 1939 to 1953, 13 patients (7 men, 6 women), aged from 33 to 75 years, were admitted to the Radium Station and the Municipal Hospital in Aarhus, Denmark, under the diagnosis of cancer of the middle ear and/or mastoid process. In 11 cases the cancer developed during a chronic otitis; only 2 patients had not previously had discharge from the ears. In 7 cases the discharge was bloody. The frequent occurrence of chronic otitis in the patients supports the conception of the etiological significance of long-continued suppuration and stresses the importance of careful observation of patients with this disease. Cancer of the middle ear metastasizes late. The results of treatment show radical excision combined with radiotherapy to be a valuable means of treatment. In cases in which full recovery has not been attained, the patients' suffering has been relieved by a not especially mutilating intervention. Twelve patients were treated. The histological diagnosis was spinocellular carcinoma in 9 cases, basocellular carcinoma in 2, and sarcoma in 1. Five patients have been free from recurrence for more than 5 years; 1 patient died without sign of recurrence after 2½ years; 6 patients died of recurrence of the tumor.

INDUSTRIAL MEDICINE

Cancer of the Scrotum in Wax Pressmen: I. Epidemiology. N. V. Hendricks, C. M. Berry, J. G. Lione and J. J. Thorpe. A. M. A. Arch. Indust. Health 19:524-529 (May) 1959 [Chicago].

This study was initiated in 1947 by a review of all cancer cases from a refinery where petroleum wax was manufactured. A detailed study was carried out of scrotal cancer by means of epidemiologic and statistical procedures. Since the time-exposure relation in occupational cancer appeared to be a factor of great importance, the study included available records for the previous 10 years and was continued for an additional 10 years, giving experience over a 20-year period. Cancer incidence figures for the refinery, as a whole, were comparable to similar figures for the general male population. The incidence of cancer among workers engaged in wax manufacture (exclusive of pressmen with 10 years' or more service) was not materially different from that among the general male population. However, the incidence of scrotal cancer among wax pressmen with 10 years' or more service was many times that of the general male population and without question is statistically significant.

Wax manufacturing methods are described, and the type of exposure experienced by a wax pressman is explained. In leaning across the side rail of the presses to clean the plates, the worker's clothing became contaminated with "slack" wax. It was the practice to tie burlap bags around the waist as protective aprons. These soon became saturated with wax and aromatic oil. Since these aprons and clothing were changed infrequently, exposure was prolonged. In the absence of frequent and adequate bathing, the exposure was, in effect, continuous. The analysis of scrotal cancer experience among wax pressmen left no doubt that these lesions were directly associated with the extensive, continuous, and prolonged exposure to "slack" or crude wax by these persons over a period of years. Such exposures could have been minimized or prevented by frequent bathing and the wearing of clean work clothing, practices which were instituted subsequently. Furthermore, a newer wax manufacturing process essentially eliminates exposure on the part of workers, with the exception of occasional mechanical workers.

Cancer of the Scrotum in Wax Pressmen: II. Clinical Observations. J. G. Lione and J. S. Denholm. A. M. A. Arch. Indust. Health 19:530-539 (May) 1959 [Chicago].

In this paper the authors describe 10 cases of squamous-cell carcinoma of the scrotum in petroleum-wax-press operators. The age of onset varied from 47 to 62 years, the average being 56 years. The period of potential exposure to unrefined wax varied from 14 to 37 years. The average potential exposure was approximately 23 years. No case of carcinoma of the scrotum occurred in wax pressmen with fewer than 10 years of potential exposure to crude wax. There was surprisingly little labor turnover on the presses; hence men working 40 years as pressmen were by no means a rarity.

The cancers usually began as wart-like lesions. Infiltration of the adjoining skin and/or intermittent ulceration of the original lesion over a period of a few months or years ultimately caused the patient to seek medical advice. Primary or recurrent lesions sometimes occurred many years after "cure," or after cessation of contact with the crude petroleum wax. Hence workers with a history of such contact should have careful scrotal examinations at relatively short intervals (3 months) throughout their lifetime. Inadequate or infrequent bathing plus the prolonged use of soiled clothing led to chronic and continuous exposure of the scrotal area of these workmen to the crude wax. Proper education of workmen and supervision in matters of personal hygiene as well as the use of protective clothing should be the basis of a protective program.

A Study of Absenteeism, Accidents and Sickness Payments in Problem Drinkers in One Industry. Observer and M. A. Maxwell. Quart. J. Stud. Alcohol 20:302-312 (June) 1959 [New Haven, Conn.].

This study is based upon the records of one company, which is located in the United States and has over 10,000 employees; in other respects the company must remain anonymous. The medical records of this company provided information on (1) all illness and injury absences of at least 8 days' duration; (2) all on-the-job accidents whether time was lost or not; and (3) all off-the-job accidents requiring an absence of 8 days or more. A group of 48 problem drinkers (32 men and 16 women), not representative of the prevalence of the problem in the company and including an excess of the long employed, was drawn and compared with 2 control groups of the same size. Each problem-drinker employee was matched by 2 counterparts in sex, age, length of service, job type, and ethnic background. The findings of the 2 control groups were combined and the data averaged for purposes of comparison with the problem group. The problem drinkers met one of the following criteria: (1) had been diagnosed in writing as an "alcoholic" by a doctor of medicine; (2) had voluntarily requested help for his own drinking problem; and (3) had given repeated evidence of intoxication, absence because of drinking verified by home visits, coupled with other conditions, such as financial trouble, domestic trouble, poor attendance, personality changes, and being arrested for drunkenness.

It was found that the group of problem drinkers had 2.5 times as many cases of illness-caused or injury-caused absence lasting 8 days or more as the control group, and 2.5 times as many days of absence. The cost of the sickness payments for the 32 men who were problem drinkers totaled $88,719, compared with $26,750 paid to the 32 men in the control group, a ratio of 3.3 to 1. In the case of the women, the ratio was nearly 2 to 1. The on-the-job accident rate of the problem drinkers after age 40 was almost identical with that of the controls. But before age 40, the problem drinkers experienced twice as many on-the-job accidents as the controls. It is hypothesized that the high on-the-job accident rate of early-stage problem drinkers is reduced in the later stage by the realization that a problem exists and the adoption of various protective measures. Such measures were not operative for off-the-job accidents. A total of 21 off-the-job accidents requiring an absence of 8 days or more was recorded for the problem drinkers and none at all for the controls. When on-the-job and off-the-job accidents are combined, for both the men and the women, the total number of accidents recorded for the problem drinkers was 3.6 times as large as that of the controls.

THERAPEUTICS

Nicoumalone: A New Anticoagulant. A. J. Brafield. Brit. M. J. 1:1211-1213 (May 9) 1959 [London].

The new anticoagulant, nicoumalone or acenocoumarol, was compared with 2 phenindione derivatives with regard to the constancy of the prothrombin levels obtained during the period of maintenance therapy. Acenocoumarol was used in the treatment of 269 patients, namely, in 155 patients with coronary thrombosis, 107 with venous thrombosis, and 7 with arterial occlusion. The dose of orally administered anticoagulant was controlled by "prothrombin" estimations, with the use of Quick's one-stage technique. Estimations were made 3 times a week, but when a patient's reaction to the drug was abnormal (more or less sensitive), more frequent controls were made. Results were recorded as "percentage prothrombin activity," the figures being obtained by reference to a "prothrombin" dilution curve. The maintenance dose with acenocoumarol varied slightly from case to case, but was most often in the region of 2 to 3 mg. a day, given as a single evening dose. The 2 phenindione derivatives were used in 117 and 242 patients respectively. Essentially the same estimation procedures were employed in all 3 groups of patients.

The results of the tests, which are recorded in a table and in a graph, show that the peak of incidence of tests within the range of 15 to 35% occurs among those patients receiving acenocoumarol, and the incidence of tests in the (undesirable) extreme ranges is also lowest in this group of patients. Furthermore, acenocoumarol is not cumulative and rapidly disappears from the body, being excreted unaltered in the urine. Only 2 of the patients treated with acenocoumarol experienced severe spontaneous hemorrhages. One of these patients was abnormally sensitive to the drug, and the second patient, in whom melena occurred, probably had a gastric ulcer. The results with acenocoumarol were superior to those obtained with the other 2 drugs.

Triamcinolone in the Treatment of Rheumatoid Arthritis. M. Thompson. Brit. M. J. 1:1259-1262 (May 16) 1959 [London].

The author reports on 12 women and 4 men, 15 of whom had rheumatoid arthritis and 1 had ankylosing spondylitis with predominantly peripheral arthritis, who were treated successively with prednisolone and triamcinolone, the ratio of dosage being 5 to 4 by weight. The daily maintenance dose of prednisolone ranged from 7.5 to 20 mg. The average daily maintenance dose of triamcinolone varied from 6 to 16 mg., according to the severity of the disease. The duration of treatment with triamcinolone varied from 2 to 26 weeks, and 11 of the 16 patients were then given an additional course of treatment with prednisolone, allowing a second comparison to be made. Of the 16 patients, 6 preferred triamcinolone, 5 preferred prednisolone, and 5 had no preference. These preferences were based on the patient's own assessments of pain and stiffness and, in addition, sense of well-being. Triamcinolone thus was found to be as effective as prednisolone in relieving arthritic symptoms in a dosage ratio of 4 to 5. Four additional patients, 3 women with rheumatoid arthritis and 1 man with ankylosing spondylitis and severe peripheral arthritis received treatment with triamcinolone given in doses of 4 mg. 4 times daily initially, which then were reduced to total daily doses of 12 mg.

Triamcinolone was found to be useful in patients with hypertension which had been induced or increased by previous steroid therapy. Weight loss and reduction of edema were noted when patients receiving prednisolone were transferred to triamcinolone. Gastroduodenal side-effects were more frequent and severe with triamcinolone than with prednisolone, and 2 of the total number of 20 patients in this series had hematemesis in the course of triamcinolone therapy. Subcutaneous ecchymoses and other side-effects of prednisolone were also observed with triamcinolone, but the pattern of involvement was not identical. From the results obtained in this series and in patients reported on by other workers, triamcinolone would appear to be a suitable steroid compound when steroid therapy was indicated for hypertensive patients or those in whom hypertension has developed with another steroid, for patients with edema and evidence of salt retention, and for patients in whom purpuric or ecchymotic lesions occurred during treatment with other steroids; it may also be of value for patients who have become restless or unduly euphoric during treatment with other steroids.

Beclamide in Intractable Epilepsy: A Controlled Trial. J. Wilson, J. N. Walton and D. J. Newell. Brit. M. J. 1:1275-1278 (May 16) 1959 [London].

The authors report on 13 patients, between the ages of 21 and 51 years, with uncontrolled, major or temporal lobe epilepsy in whom a statistically controlled double-blind trial of beclamide (N-benzyl-beta-chloropropionamide), a new anticonvulsant, was carried out in the epileptic clinic of the Royal Victoria Infirmary in Newcastle upon Tyne, England, in 1957. The patients were living active and useful lives despite their epileptic attacks, and all attended the clinic at monthly intervals for examination throughout the trial. For a preliminary period of 3 months the patients were observed on the anticonvulsant regimen they were already following. During each of 2 subsequent 3-monthly periods they received either unmarked beclamide tablets in doses of 1 Gm. 3 times daily or identical control tablets of lactose, in addition to the drugs they were already receiving. At the end of this 6-monthly period those patients whose attacks were still relatively uncontrolled were observed for an additional 4 to 8 weeks while receiving beclamide in doses of 4 Gm. daily in addition to their previous medication.

The results showed that beclamide given in a daily dose of 3 Gm. was significantly more efficient than the inert tablet, reducing the number of seizures to 75% of their previous frequency without any noteworthy side-effects. The lactose tablets did not have any psychological placebo effect. Little improvement was obtained by increasing the daily dosage of beclamide from 3 to 4 Gm., but this increased dose was given for a relatively short period and the evidence on this point is inconclusive. Beclamide has a significant anticonvulsant effect, but in view of the high cost of this drug it should be used only in epileptic patients who have failed to respond to other remedies. It appears that the drug may safely be given in combination with other anticonvulsants.

Antibacterial Activity of Serum of Normal Subjects After Oral Doses of Demethylchlortetracycline, Chlortetracycline and Oxytetracycline. H. A. Hirsch and M. Finland. New England J. Med. 260:1099-1104 (May 25) 1959 [Boston].

The authors mention previous studies on the new tetracycline antibiotic, demethylchlortetracycline, in comparison with other tetracyclines. In this paper they deal with comparisons of the antibacterial activity resulting in the serum of the same normal subjects after ingestion of equivalent doses of demethylchlortetracycline, oxytetracycline, and chlortetracycline. The antibiotics used in this study were provided in capsules, each of which contained 250 mg. of the respective hydrochloride. Demethylchlortetracycline was provided in 2 forms, one containing only lactose as a filler and the other having an equal amount of citric acid, which, in other studies, had been shown to enhance the serum levels of tetracycline. The chlortetracycline capsules contained only lactose, but those of oxytetracycline contained equal amounts of glucosamine hydrochloride, which has been reported to enhance the serum levels of that drug. The subjects for this study were 8 normal young men.

The results of the present study show that oral doses of demethylchlortetracycline, given to normal men, are absorbed as well as, or better than, equal doses of either chlortetracycline or oxytetracycline in combination with glucosamine. However, the new antibiotic produces much greater activity in serum than the other 2 analogues against each of the 3 test organisms used, namely, Streptococcus 98, Staphylococcus 209P, and Bacillus cereus 5, or when compared in terms of the concentration of antibiotic expressed as activity of any one of the analogues. Moreover, the activity produced by the oral doses of demethylchlortetracycline persists and can be detected in serum for 24 to 48 hours longer than after the doses of either chlortetracycline or oxytetracycline. The absorption of tetracycline is somewhat better than that of demethylchlortetracycline (as measured by the serum levels of the antibiotic ingested); however, as reported in the previous study by Kunin and Finland, the levels of antibiotic in the serum during administration of repeated oral doses are the same or higher with demethylchlortetracycline at all times after the first dose even when expressed in terms of the antibiotic ingested. In terms of antistreptococcic or antistaphylococcic activity, and in terms of concentration of antibiotic expressed as activity of the same standard, demethylchlortetracycline yielded higher activity than tetracycline at all times. The results of the present study did not show any improvement in absorption of demethylchlortetracycline given with citric acid.

The authors point out that the findings in this study, as in previous comparisons reported from this laboratory with this group of drugs, with penicillin analogues, and with the erythromycin group of antibiotics, emphasize the importance of using the same standard of reference in comparing different but related drugs. Comparisons based only on the concentrations of the antibiotics administered, although they are useful as indicating their relative absorption, distribution, and excretion, do not compare their relative antibacterial activity, which is the purpose for which they are used therapeutically. The new tetracycline antibiotic, demethylchlortetracycline, produces much higher and longer sustained levels of antibacterial activity in the serum after oral administration than either chlortetracycline or oxytetracycline.

Application of the Protein-Saving Effect of Androgenic Hormones in the Treatment of Patients Following Total Gastrectomy. Gastroenterology 36: 599-612 (May) 1959 [Baltimore].

Androgenic hormones have been known to exert a protein-building influence. An attempt was made to investigate whether improvement of the utilization of the protein ingested could contribute to the attainment or maintenance of a positive nitrogen balance in patients whose capacity for food uptake was limited. Investigations were made with the aid of balance tests in 16 agastric patients (1 woman and 15 men) who were given androgen therapy and in 18 agastric patients who were not given androgen treatment.

Protein utilization in all male postgastrectomy patients except one was found to be improved following administration of testosterone propionate. The nitrogen balance in the one female agastric patient was likewise improved as a result of treatment with testosterone propionate at lower dosage, combined with estrogen treatment. The patients treated with androgens showed a significantly more marked increase in body weight during clinical observation than the patients not treated with androgens. During after-treatment at the outpatient department by administration of a maintenance dose of testosterone phenylpropionate, body weight continued to increase in the majority of patients. Disagreeable or untoward side-effects due to androgen treatment were not seen. Pathological enhancement of the libido was found in none of these patients. Prostatic carcinoma constitutes an absolute contraindication to treatment with androgenic hormones. It is believed that the use of androgenic hormones merits a place in the treatment of completely or partially agastric patients who are in an unfavorable or moderate nutritional condition.

"Kanamycin," a New Antibiotic: Experimental Study "In Vitro." G. Andrieux, J. Monnier and R. Bourse. Presse méd. 67:718-719 (April 11) 1959 (In French) [Paris].

In vitro bacteriological studies on kanamycin have demonstrated the particularly interesting antibiotic properties of this new drug. It has essential bactericidal action which is effective in low concentrations against many bacteria, especially staphylococci and Proteus organisms. The pH of the culture medium has little effect on the activity of kanamycin. Another important point is the fact that serum has no inhibitory effect on its in vitro activity. Strains of bacteria repeatedly subjected to its action present progressive but slowly developing resistance, generally at moderate levels. This resistance to kanamycin acquired in vitro does not lead to a diminished sensitivity of the strains to certain other antibiotics. The combination of kanamycin with penicillin has a synergistic effect in vitro on the bactericidal action of certain strains. Acquired resistance to kanamycin is associated with a cross-resistance to neomycin and framycetine, and vice versa. On the other hand, if the strains which have become resistant to kanamycin show cross-resistance to streptomycin, inversely, strains that have become highly resistant to streptomycin retain their sensitivity to kanamycin practically unchanged.

Kanamycin given by the intramuscular route is rapidly absorbed; the blood levels obtained in animals show a high concentration in the first 15 minutes, which decreases gradually in the hours following. The antibiotic diffuses well, except in the muscles and in the brain. The urinary elimination is good, and the urinary concentrations are even higher than with streptomycin. Studies on the toxicity of the antibiotic in animals show frequent renal lesions, which, however, are reversible, whereas neurotoxicity seems to be milder than that characteristic of streptomycin. The first clinical results obtained in man indicate that kanamycin is a valuable antibacterial agent in certain severe infections, particularly those caused by staphylococci or other enterobacteria.

One Hundred Patients Treated with Dexamethasone: Comparison with Prednisone and 6-Methylprednisolone. A. Lichtwitz, D. Hioco and C. Greslé. Semaine hôp. Paris 35:1570-1580 (May 4) 1959 (In French) [Paris].

Study of the action of dexamethasone (16-alpha-methyl-9-alpha-fluoro-prednisolone [16 MFP]) in patients with various articular, allergic, and glandular disorders confirmed the reports of other authors who found that this new preparation was effective in small doses. Dexamethasone embodies all the modifications that are capable of increasing the anti-inflammatory effect of a corticoid, i. e., halogenation in the 9th position, dehydrogenation between the first and second positions, and methylation in the 16th position, and its index of efficacy in relation to that of the other corticoids (prednisone and 6-methylprednisolone) is about 7. The conditions treated were so diverse that the dosages and results in each group must be considered separately. Patients with diseases of the joints (39 in all), especially chronic progressive polyarthritis, were given doses ranging from 1 to 3 mg. of dexamethasone, rarely more or less. The doses needed in chronic progressive arthritis did not depend on the duration or extent of the disease or on its evolutionary capacity. They varied greatly from patient to patient, but in a large proportion of those with this condition better control of the disease was secured with doses 5 to 7 times less than those of prednisone. The action of dexamethasone in the inflammatory exacerbations of various arthroses and rheumatic fever, on the other hand, was identical with that of prednisone. One of 5 patients with gout derived some benefit from dexamethasone, but in the other 4 it was ineffective.

Smaller doses, not exceeding 1.5 mg., were usually sufficient for effective control of respiratory and cutaneous allergies, making the index of efficacy in these conditions about 8, or a little higher than it is in articular diseases. The index is still higher (10 or more) in patients with adrenal insufficiency (primary or secondary), while in those with adrenogenital syndromes it is more than 40. A few patients with miscellaneous conditions as different as scleroderma, pemphigus, hypoglycemia, asthenia, and nephrotic syndromes exhibited results which were, on the whole, similar to those obtained with the other corticoids, sometimes better, sometimes worse, but the numbers were too small for the formation of definite opinions.

The question to be considered in using a new corticoid, such as dexamethasone, is not only whether it is effective, because the results desired can usually be obtained with the older ones by increasing the dosage, but also, and even more, whether it is safe when given in effective and especially in comfortable doses. The subject of the accidents caused by dexamethasone and the other corticoids is discussed in the next article, in which an attempt has been made to evaluate the margin of safety between the optimal therapeutic dose and one that exposes the patients to the dangers of cortisonism.

***Intolerance, Incidents, and Accidents Provoked by* Dexamethasone (16 MFP).** A. Lichtwitz, D. Hioco and C. Greslé. Semaine hôp. Paris 35:1581-1593 (May 4) 1959 (In French) [Paris].

The 100 patients treated with dexamethasone, as described in the preceding article, were thoroughly investigated for evidences of cortisonism affecting the tissues, the metabolism, and certain glandular activities. Analysis of the data obtained shows that the efficacy of dexamethasone in doses below 2.5 mg. is greater than that of prednisone in doses below 20 mg. and that side-effects occur less frequently with it than with the other corticoids. The margin of safety, in other words, between its anti-inflammatory action and its other effects on the tissues, in these patients at least, was greater than that of prednisone. It seems, moreover, that not only are the tissues less vulnerable, but also the side-effects are different. The authors had already noted that, with 6-methylprednisolone and triamcortisone, the manifestations of cortisonism, though frequent, were not the same: thus, with 6-methylprednisolone, as with triamcortisone, the cardiac disturbances were rarer and the digestive disturbances different; by contrast, 6-methylprednisolone and triamcortisone frequently led to the complications of headache, visual disturbances, vertigo, and a disagreeable taste in the mouth, all of which are exceptional with prednisone. The authors emphasize the differences in the side-effects produced by prednisone, 6-methylprednisolone, triamcortisone, and dexamethasone, because on several occasions they have been able, by reducing the dosage of one of these corticoids, to suppress its untoward effects while at the same time increasing the anti-inflammatory effect by giving it in association with another or others. This ability to cumulate the anti-inflammatory effects of the various synthetic steroids by associating them, while keeping each one below the threshold of cortisonism, holds good only for intolerance and most of the incidents accompanying their use. Cushingoid manifestations and accidents properly so called (perforation, hemorrhages, decalcification) occur with all the corticoids and *to a certain extent in proportion to* the dosage used.

It was thought, some years ago, that it would be quite impossible to dissociate the anti-inflammatory properties of cortisone from its other qualities. Recent advances, however, in which the sodium retention of hydrocortisone has been almost eliminated by dehydrogenation between the first and second positions, and the importance of the modifications produced in the hormone by halogenation, methylation, and hydroxylation, when they concern the 9th, 6th, and especially the 16th positions, justify the belief that this dissociation can, after all, be accomplished. Dexamethasone represents a step in this direction, and even now many patients who *seemed to be resistant to corticotherapy can be* treated with the new corticoids, 6-methylprednisolone, triamcortisone, and especially dexamethasone, with greater comfort at a lower cost.

Tetracycline Provocation in Lupus Erythematosus. C. A. Domz, D. H. McNamara and H. F. Holzapfel. Ann. Int. Med. 50:1217-1226 (May) 1959 [Lancaster, Pa.].

A hypersensitivity reaction may be of vital importance with regard to lupus erythematosus; it may herald accelerated systemic spread in discoid lupus, or it may be the final disastrous turn in the course of a patient with systemic lupus erythematosus. The authors call attention to what may be a hitherto unappreciated provocative potential of the tetracyclines in lupus erythematosus. They present the histories of 3 patients in whom L. E. reactions occurred after the administration of tetracycline. In the first patient, systemic lupus erythematosus developed *de novo* after a hypersensitivity reaction to tetracycline. Despite her completely negative history for any other allergic reactions in the past, the tetracycline reaction did not represent an idiosyncrasy, but was a true sensitization phenomenon, since the drug had been administered without reaction 5 months earlier. This had served as the priming, or sensitizing, dose. Once the reaction occurred and active lupus erythematosus supervened, her reactivity was at such a pitch that a violent reaction developed to glutethimide, a drug of low sensitizing potential. The reactions to tetracycline began while she was taking hydrocortisone, and the reactions to glutethimide occurred while she was taking prednisone.

In the second patient tetracycline had been used to good advantage early in the course of her disease to treat respiratory infections. A later attempt to employ the drug proved disastrous, setting off a violent reaction which appeared to hasten her death. The cutaneous and systemic flare which followed tetracycline never subsided, but progressed until her death. The third patient initially demonstrated positive L. E. tests while he was taking penicillin and tetracycline simultaneously. The tests reverted to negative when the antibiotics were withdrawn, and a positive test was later provoked by each antibiotic separately while he was receiving steroids. At this stage of his illness it cannot be decided whether this patient has systemic lupus erythematosus or pulmonary fibrosis with rheumatoid arthritis. Circumvention of such reactions depends upon the physician's awareness of the sensitizing potential of the medications he employs. The occurrence of a drug reaction in any patient should be a signal to consider the possible presence of lupus erythematosus. In the patients presented, steroids provided no appreciable protection against L. E. reactions.

Treatment of Pulmonary Metastases of Certain Forms of Cancer of the Breast. J. Moreno, O. Mazzotti and J. Moreno Jr. Semana méd. 66:159-161 (Jan. 29) 1959 (In Spanish) [Buenos Aires].

Two patients, 40 and 55 years old, respectively, with cancer of the breast were observed. The younger patient had an adenocarcinoma of the right breast and metastases to the axillary and infraclavicular lymph nodes, which regressed after roentgen-ray castration and administration of roentgenotherapy up to a total dose of 2,500 r on the tumor and 2,000 r on the metastatic lymph nodes. Two years later a severe recurrence of the breast tumor occurred. The patient reported with acute dyspnea. Roentgen-ray examination of the chest showed bilateral miliary pulmonary metastases. Complete relief of the respiratory symptoms and disappearance or great diminution in the number of pulmonary metastases were obtained by administration of testosterone propionate in daily doses of 50 mg. in 2 series of 10 and 20 days with an interval of 10 days. Relief of the symptoms lasted for 2 years, after which the patient had acute toxic symptoms and died of metastases to the liver.

The older patient had a fibroadenoma of the right breast. Deep roentgenotherapy was followed by a period of 2 years of complete relief of symptoms and signs of cancer. A recurrence occurred, during which bilateral miliary pulmonary metastases appeared. The patient underwent radical mastectomy. Androgen treatment was given in accordance with the same schedule and doses given to the younger patient but in association with corticotropin (ACTH) in daily doses of 40 units for 10 consecutive days followed by the same number of days of rest. Duration of the treatment is not specified. The pulmonary metastases disappeared from both lungs, and the patient is living in a satisfactory state of health more than 2 years after starting the treatment. The results obtained in these 2 patients showed the favorable effects of androgens in patients with cancer of breast by improving the symptoms, making the pulmonary metastases disappear, and prolonging the life span of the patient.

Development of Peptic Ulcers During Treatment With Corticosteroids. P. Aagaard, M. Andreassen and T. Schiødt. Acta chir. scandinav. 116:423-428 (no. 5-6) 1958-1959 (In English) [Stockholm].

The authors report on 10 patients (7 women and 3 men), their ages ranging from 32 to 69 years, in whom ulcers developed after treatment with corticotropin (ACTH), cortisone, or related steroids. Nine of the 10 patients had rheumatoid arthritis and 1 patient had ankylosing spondylitis; for these conditions they received treatment from a few months to 7 years before the onset of dyspepsia. Most patients demonstrated symptoms for only a few months. None of the 10 patients had had dyspeptic discomforts before the institution of steroid therapy. The ulceration involved the stomach in 7 patients, the pylorus in 2, and the jejunum in 1. In 7 of the 10 patients, the radiograms of the stomach obtained in the early phase of steroid treatment showed normal conditions, but later a distinct ulcer appeared. This fact and the absence of dyspepsia before the commencement of steroid therapy suggest that an ulcer was actually produced.

Perforation occurred in 2 patients and hematemesis in 1 without preceding symptoms. In the remaining 7 patients, the ulcerations showed a more chronic course. Gastric resection was performed on all the patients except one. Billroth II operation was performed on 3 patients, and Billroth I on 6, including 4 patients in whom the procedure was combined with vagotomy. One patient showed adrenocortical insufficiency after the operation, but otherwise the postoperative course was uneventful in all the patients.

The patients were followed up for from 2 months to 5 years after the operation. Six of the 10 patients were perfectly well, 2 had mild dyspeptic reactions, and 2 were only followed up for 2 months after the operation. In 6 patients the steroid therapy was continued after the operation, and in spite of this, no dyspeptic discomfort occurred. Malignant transformation was not observed in any of these patients. Clinically, these ulcers are similar to ordinary gastric ulcers, apart from a less dramatic course during perforation. Pathoanatomically, the ulcers in these patients did not differ from ordinary chronic gastric ulcers.

PATHOLOGY

The Cytology of Salivary Glands Tumors. A. Appaix, H. Bonneau, and D. Sommer. Presse méd. 67:600-602 (March 25) 1959 (In French) [Paris].

A new procedure for the anatomico pathological diagnosis of salivary gland tumor consists of cytological study made possible by aspiration with a fine needle. This is easy to perform, is relatively painless, has no contraindication, is practicable in every type of patient including children, and generally obviates biopsy. The technique is simple. It consists of puncture by a very fine needle, of 0.2 or 0.3 mm. diameter, fixed on a 2-cc. syringe as airtight as possible. Needle and syringe are drawn up together. Their contents are quickly placed on a slide and fixed with equal parts of pure alcohol and ether. This is followed by staining according to Papanicolaou's technique or with Harris-Shorr's stain.

Abnormal cellular elements found by the authors are described and pictured. They include undifferentiated epithelial cells, which indicate a diagnosis of mixed tumors. These are very elongated fusiform cells with a basophil protoplasm arranged around the nucleus, presenting long extensions which give a peculiar and characteristic aspect, for which the term "fringed" is used, to the smear. Another abnormal element is the cylindrocubic cell whose protoplasm is uniform, without a vacuole, and hyperbasophilic, with a central hyperchromatic nucleus. In 3 observations cylindrical cells were found, which had an ordinary nucleus, abundant basophil protoplasm, and a vacuole in the nucleus. In most cases, however, differentiated and even eosinophil epidermoid elements are found. Cells with a neoplastic character are most frequently found among these elements.

Results of 24 examinations are given. These results were all verified by study of surgically removed material. The authors' diagnosis was correct in 18 cases of nondeveloping mixed tumors, salivary cysts, and epidermoid epitheliomas. There were 4 errors of minor importance. In 2 cases the diagnosis was mixed tumor when it should have been cystadenolymphoma, and in the other 2 the answer had been simple mixed tumor when the correct diagnosis should have been mixed tumor with epitheliomatous course. Several times punctures brought about a decision in cases in which it was a question of either paritod tumor or adenitis. The authors insist on collaboration between the clinician and the cytologist, the need of training in such examinations, and the value in doubtful cases of a preoperative extemporaneous biopsy.

Function and Morphology of the Kidney in the Course of *Thromboangiitis Obliterans.* B. Fida, U. Ruberti and A. Tizianello. Minerva med. 50:1031-1041 (April 11) 1959 (In Italian) [Turin, Italy].

Functional and morphologic conditions of the kidneys were investigated in 56 patients with thromboangiitis obliterans. There were pathological changes in the kidneys of 39 patients (70%), but the arterial blood pressure level was within the normal limits. Azotemia values were normal in all but 2 instances. Thirty-eight patients (68%) had normal constituents in the urine. Tests for kidney function revealed slight pathological states in patients with normal urine and more pronounced pathological states in patients with abnormal constituents in the urine. Pathognomonic vascular changes of thromboangiitis obliterans or presence of metachromasia were observed in only a few instances. The intima of certain vessels was slightly thicker in 2 patients. The correlation between the severity of the heart condition and the decrease of the blood flow in the kidneys was revealed by electrocardiographic findings in 39 patients (70%). Tubular capacity of excretion was preserved in patients with normal urine, and it was reduced by 37.6% in patients with abnormal constituents in the urine. Histological findings of biopsy specimens demonstrated that morphologic changes of the kidney had taken place in all the patients, being more pronounced in those with abnormal constituents in the urine than in those with normal urine.

This investigation revealed that the kidney was becoming gradually, though mildly, involved in the course of thromboangiitis obliterans, even in the absence of abnormal constituents in the urine. A severer involvement was observed in 2 patients. The involvement of the kidney became more pronounced in this series when abnormal constituents appeared in the urine.

RADIOLOGY

The Angiographic Study of Carotid Insufficiency and Cerebral Ischemia. M. M. Keirns and J. E. Whiteleather. Am. J. Roentgenol. 81:929-944 (June) 1959 [Springfield, Ill.].

The authors obtained 1,535 cerebral angiograms from patients with cerebrovascular disease in the department of radiology of the Baptist Memorial Hospital in Memphis, Tenn., between 1951 and 1958; the last 626 consecutive angiograms were obtained from 482 patients, in each of whom the cervical carotid artery, as well as the intracerebral vessels, was routinely visualized. Alterations of equipment, permitting visualization of the vessels of the neck on every cerebral angiogram, were initially made to provide for a better diagnosis of carotid occlusion. A study of the much broader problem of carotid stenosis was an outgrowth. Much information was obtained on carotid insufficiency and cerebral ischemia, a condition which most commonly affects the brain and is the second most common cause of death.

Stenosis of varying degree was seen in 119 of the 626 angiograms, i. e., 3 times more often than tumors, 5 times more often than aneurysms, and 15 times more frequently than arteriovenous anomaly. Carotid insufficiency is often clinically indistinguishable from tumor, intracerebral hemorrhage, cerebral embolus, or "idiopathic cerebral atrophy." The process starts surprisingly early in middle life; it was observed coincidentally in patients as young as 31 years of age and undoubtedly often exists for years before the diagnosis is made. In the early or developing stage, carotid insufficiency produces a variety of minimal symptoms, such as headache, mental disturbances, transient paresthesias, or speech disturbances, which are usually ignored or casually dismissed. Yet, even at the present status of vascular surgery, some of these patients can be successfully treated and should be so treated before complete occlusion occurs.

Surgical relief of the occlusive disease was attempted by endarterectomy on 32 carotid arteries in 28 patients, 11 of whom had complete occlusion of one side and 2 had complete bilateral occlusion, 7 had severe stenosis (60% or more) of one side, 7 had severe stenosis of one side and complete occlusion of the other side, and 1 had severe bilateral stenosis. Of the 28 patients operated on, 24 were men whose average age was 58 years, and 4 were women whose average age was 62 years. Of the 19 carotid arteries with complete occlusions, patency was not restored in 9; patency was restored in the absence of clinical improvement in 6; and patency was restored with a good clinical result in 4. Of the 13 carotid arteries with severe stenosis, patency was restored in 12, with good results in 5 and with excellent results in 7; patency was not restored in 1. Early surgical treatment is possible only if the disease process is suspected and the patient referred for angiography early. This should be done on patients of all types and all ages, including those who have just suffered an acute cerebrovascular accident. This policy has proved safe.

Clinical studies and especially angiography revealed 4 types of stenosing disease as follows: solitary constriction at the bifurcation of the common carotid artery; localized constriction in the carotid siphon or in the anterior or middle cerebral arteries; multiple small plaques in secondary and tertiary cerebral arterial branches; and uniformly narrow, sparse vessels throughout the brain without any definite identifiable plaques. Undoubtedly, stenosis leads to occlusion, and treatment of the stenosing plaque prevents the later occlusion. Correlation between carotid and cerebral vascular stenosis and atrophy was established.

Restoration of the Sella Turcica After Treatment of Pituitary Adenomas. S. M. Unger and B. Roswit. Am. J. Roentgenol. 81:967-971 (June) 1959 [Springfield, Ill.].

Recalcification of the eroded sella turcica, dorsum sellae, and posterior clinoid processes after irradiation and/or surgical treatment for pituitary tumors appears to be an unusual finding. Even more unusual is a reduction in the size of the enlarged pituitary fossa. Roentgenographic evidence of sellar reconstruction was noted by the authors in 3 men, between the ages of 24 and 41 years, among 70 patients treated for pituitary adenoma at the irradiation clinic of the Bronx Veterans Administration Hospital in New York. Two of these 3 patients had histologically proved chromophobe adenomas, and received surgical and irradiation therapy. In one of these 2, reduction in the anteroposterior dimensions as well as in the depth of the pituitary fossa, in addition to recalcification of the structures in the sella turcica, was revealed by the roentgenograms of the skull. A clinical diagnosis of eosinophilic adenoma was made in the 3rd patient who received irradiation therapy. A 4th patient, whose case had been reported previously and in whom such roentgenographic changes were observed after therapy, had acromegaly for which he was treated with irradiation.

A review of the literature showed that the highest incidence of restoration of the sella turcica yet reported was that of 8 among 29 patients treated for acromegalies. Other authors reported an incidence of 1 among 36 patients or 3 among 23 patients with acromegalies. Bachman and Harris pointed out that in none of their 64 patients treated for pituitary adenomas have they seen an enlarged sella turcica decrease in size or demineralized clinoid processes show evidence of recalcification. It appears, therefore, that a report of the authors' 3 patients has been well indicated.

ANESTHESIA

Pneumoencephalography and Air Embolism: Simulated Anesthetic Death. J. Jacoby, J. R. Jones, J. Ziegler and others. Anesthesiology 20:336-340 (May-June) 1959 [Philadelphia].

The authors report on 895 children and 301 adults to whom a general anesthetic was administered for pneumoencephalography performed at the Ohio State University Hospitals in Columbus between January, 1948, and January, 1958. Major complications occurred in 7 patients, causing death in 6 in the course of the procedure. Five of these deaths were in children. The diagnosis of air embolism was made and confirmed at autopsy in 4 patients; one additional patient had the clinical signs of air embolism, but autopsy permission could not be obtained. One patient died of herniation of the brain stem. The 7th patient presented another instance of brain stem herniation, in which resuscitation was successful, but the patient later died as a result of his brain lesion.

In each of the 7 patients the physiological changes resulting from air embolism or herniation of the brain stem occurred rapidly, and were manifested by abrupt embarrassment or cessation of respiration or circulation. The interpretation of these signs has been usually that an anesthetic complication, rather than a surgical, has occurred. This interpretation was not substantiated at autopsy in any of these patients. During pneumoencephalography the onset of respiratory and circulatory collapse should immediately bring to mind 2 diagnostic possibilities: after lumbar puncture, but before the injection of air, the most likely diagnosis is herniation of the brain stem; after the injection of the air, the most likely diagnosis is air embolism. Immediate recognition and prompt treatment of these complications may prevent a fatal outcome. The surgeon or anesthesiologist should listen constantly to the heart of the patient during the procedure. The beginning of a murmur is a signal to stop the injection of air. Autopsy and radiography are of value in establishing the correct diagnosis when air embolism or herniaticn of the medulla cause a simulated anesthetic death.

Clinical Trial of a New Analgesic: Dihydrone Pectinate. C. Frileux and P. Series. Presse méd. 67:729 (April 11) 1959 (In French) [Paris].

A new analgesic drug, oxycodone pectinate (French preparation known as dihydrone pectinate), has been given a 4-month clinical trial in a total of 84 patients. The drug was administered to 46 of these patients with fractures to alleviate pain, particularly that occurring after orthopedic surgery. The initial and maintenance dose varied according to the terrain (whether the patient was young and vigorous or old), and according to the intensity of pain. Generally, the dosage administered initially has not exceeded 1 ampul (24 mg.) of oxycodone pectinate given at one time, and the maintenance doses usually consisted of 12 mg. Patients who were expected to be particularly resistant were given an initial dose of 36 mg. Comparison with the effect of doses of morphine hydrochloride or pethidine usually used in similar circumstances showed that the degree of analgesia obtained by oxycodone pectinate was the same. Its effect started within 10 to 20 minutes after the injection and lasted for an average of 4 to 6 hours, which is markedly longer than the duration of the relief obtained with the other analgesics. Oxycodone pectinate offers 2 important advantages over the previously used analgesics, because it makes it possible to administer the injection at longer intervals and to give smaller daily doses with minimal side-effects.

The remaining 38 patients received intramuscular doses of 24 mg. of oxycodone pectinate combined with 0.25 or 0.50 mg. of atropine sulfate (with or without 0.05 Gm. of promethazine) for premedication prior to general anesthesia before operation. There was no respiratory depression, no postoperative change in diuresis, and no disagreeable phenomena such as are usually seen after general anesthesia. The patients belonging to the older age group received 12 mg. of oxycodone pectinate combined with 0.25 mg. of atropine sulfate, and 0.025 Gm. of promethazine. These patients remained somnolent longer and required fewer injections of postoperative analgesics at a longer interval (6 to 8 hours) after premedication. It was not necessary to give oxygen therapy after the operations in these patients despite their marked respiratory depression. The postoperative diuresis was comparable to that seen after premedication with morphine. The analgesic results obtained with oxycodone pectinate justify its use on a larger scale, particularly in older patients in whom it does not have the disadvantages of morphine.

Experience With Pharmacologically Induced Cardiac Arrest in Hypothermia. A. Martelli, E. Belelli and L. Urso. Minerva chir. 14:163-166 (Feb. 15) 1959 (In Italian) [Turin, Italy].

Studies on induced hypothermia during operation on the bloodless heart were conducted in 15 dogs. The procedure consisted in immersing the dog in an ice bath, opening the chest, clamping the venae cavae, inducing circulatory and cardiac arrest by drugs, making an incision and closing the right atrium by suture, and rewarming the animal to normal body temperature. A solution of potassium citrate was injected below the clamped sections of the venae cavae and of the aorta in 7 dogs. Irreversible ventricular fibrillation developed in all the dogs despite the cardiac massage and electric defibrillation. Intravenous injection of a dextrose solution according to the technique of Laborit, designed to prevent fibrillation from taking place when the clamps were removed, was of no avail. The heart turned flaccid and cyanotic in color, which state improved only momentarily and transitorily during massage.

A dose of 100 mg. of acetylcholine was administered to each of the remaining 8 dogs, followed by cardiac arrest which lasted up to 16 minutes. No instance of irreversible ventricular fibrillation developed in this group. Clamps were first removed from the vena cava superior and after a few seconds from the vena cava inferior when steady pulsation was established. This procedure anticipated sudden dilatation of the heart, not as yet fully tonic. A dose of 0.6 mg. of atropine sulfate was injected into the aorta before the restored circulation. Arrhythmia developed in 2 dogs when the heart beat was resumed, and it was corrected by a short massage. Electrocardiograms revealed symptoms of myocardial ischemia in those instances where prolonged asystole developed. The authors believe that acetylcholine is an efficacious drug for induced cardiac arrest and for prevention of the related ventricular fibrillation.

PUBLIC HEALTH

The Mortality from Arteriosclerotic and Hypertensive Heart Diseases in the United States: II. Possible Relation to Industry. L. H. Sigler. Am. J. Cardiol. 3:605-610 (May) 1959 [New York].

The author made a statistical study of the concentration of manufacturing establishments in the United States in relation to the mortality rates among patients who died of arteriosclerotic and hypertensive heart diseases in the United States. It was found that the mortality rates among patients who died of these diseases, as well as the concentration of manufacturing establishments, vary greatly in the different states and regions of the country. With few exceptions, a definite parallelism between the death rates and the number of manufacturing establishments in the various states was noted. Those states that have the highest concentration of manufacture generally have the highest rates of mortality due to these diseases. There is also a definite geographical distribution of both the manufacturing establishments and the rates of mortality due to these diseases, corresponding in location to the sequential expansion of settlements in the various parts of the country since colonial days. In general, those areas which were first settled and in which industry was first established have the highest concentration of manufacture and mortality rates.

One must assume that there are probably a multiplicity of factors, induced by an altered mode of living associated with modern industrial life, which predispose to earlier chronic degenerative cardiovascular diseases and death. Some of the factors may be the smog-filled, poisonous air in the industrial regions, with its gradual and continuous absorption into the circulation; confined, indoor life; insufficient fresh-air and open-air recreation; pent-up emotions, associated with monotony of automatic activity in this machine age; rapid speed of work and travel in this restless age; and extreme tensions under which men live. Confining the physician's attention only to the study of fat metabolism and dietary habits as the causes of arteriosclerotic and hypertensive heart diseases is taking too narrow a view in the investigation of the underlying causation. The study of the causation of these diseases should be broader in scope than heretofore and should include the factors listed above.

Investigation of the Source and Mode of Tuberculous Infection in Infancy. E. Bellisari and R. Gaddini de Benedetti. Arch. ital. pediat. e puericolt. 19:369-390 (no. 5) 1958 (In Italian) [Bologna, Italy].

The authors made a statistical investigation, mainly for the analysis of social factors which were related to tuberculous disease, among 224 hospitalized infants and children. The object was to contribute to a possible future public health program for the prevention of the disease. Approximately two-thirds of the patients were males. One hundred two children (45.6%) were below the age of 2 years, 79 (35.2%) were between the ages of 2 and 6, and 43 (19.2%) were above the age of 6. Varieties of the postprimary phase of the disease characterized by blood dissemination were present in 135 patients (60.7%), pulmonary postprimary varieties in 59 (26.4%), and primary varieties in 20 (8.9%), all the patients being under the age of 6 years.

Body weight was normal in about 200 (91%) of the tuberculous patients. Of 218 infants (97.7%) born at term, 193 (86%) were fed at breast for a period of over 3 months. Parents were the source of infection in 139 instances (62.5%), the mother being the source in 106 (48.8%). There was no significant difference in incidence of the disease as related to the order in which the infants were born or whether the families they came from were large or small, but the incidence was higher if the patient was the only child in a family. Since the father's occupation was known for the majority of the patients, it was manual laborer in 109 instances (66%), white collar worker in 43 (26%), and member of the professions in 5 (3.4%). The mortality rate among the patients below the age of 2 years was 17 (16.7%), and among those between the ages of 2 and 6 it was 4 (35.2%). All the patients died of tuberculous meningitis, except one whose death was from postprimary pulmonary tuberculosis.

BOOK REVIEWS

An Atlas of Normal Radiographic Anatomy. By Isadore Meschan, M.A., M.D., Professor and Director, Department of Radiology, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina. With assistance of R. M. F. Farrer-Meschan, M.B., B.S., M.D., Research Associate, Department of Radiology, Bowman Gray School of Medicine of Wake Forest College. Second edition. Cloth. $16. Pp. 759, with 1446 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, England, 1959.

It is difficult to review a book which provides no point for adverse criticism. The first edition of this book seemed of such excellence that one would have expected further printings rather than a new edition; moreover, it would have seemed that a second edition could add little to the completeness of the first. This is, however, far from true. The author has managed to polish and expand what was to begin with a near perfect creation. Specifically, an excellent chapter on radiation protection has been added. The sections dealing with bone growth and development, the central nervous system, the cardiovascular system, and the alimentary tract and biliary passages have been revised and enlarged. All of the illustrations are of high quality and beautifully reproduced. The line drawings are particularly notable for their clarity and concise labeling.

A prominent anatomist recently stated that he thought it was probably unreasonable to expect doctors or even senior medical students to remember any anatomy. The author, in producing this book, has entered a powerful wedge into this wall of ignorance. His interesting presentation of pertinent and clinically applicable anatomic information should have a powerful influence on changing this situation. This book can be recommended without reservation to medical students, residents in all specialties but especially radiology, and to practitioners of practically every discipline in clinical medicine who make ever increasing use of diagnostic radiology.

Inborn Errors of Metabolism. By David Yi-Yung Hsia, M.D., Associate Professor of Pediatrics, Northwestern University Medical School, Chicago. Cloth. $9.50. Pp. 358, with 127 illustrations. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1959.

It is 51 years since Sir Archibald Garrod coined the term "inborn errors of metabolism." In 1908 Sir Archibald was able to describe four inherited metabolic disorders: cystinuria, alkaptonuria, albinism, and pentosuria. Perhaps some measure of the advances that have been made in understanding the genetics and biochemistry of metabolic disorders is afforded by noting that the author is able to discuss 84 diseases under the same title in this monograph.

Progress in this area has reached the point where it has become difficult to define the borders of this field. Studies of chromosome structure and of the chemical composition of the genic material have led to the concept that all inherited characteristics must have a biochemical basis. Each gene probably represents a specific molecular configuration and must produce its effect, whether normal or abnormal, by initiating a chain of chemical reactions within the cell nucleus. In this broad view, any disease in which genetic factors are concerned could justifiably be classed as an inborn error of metabolism. The author has chosen to limit his discussion to a group of diseases in which at least a part of the chain of biochemical events leading to abnormality has been studied. The choice of conditions to be included in this category must of necessity be somewhat arbitrary. The author points up the unfinished nature of this story in a brief chapter entitled The Future of Biochemical Genetics. Here he gives a list of 67 additional diseases for which a genetic basis is well established, but the biochemical evidence is insufficient for including them in the group of metabolic errors. A second list is also given of 35 biochemical disturbances in which he considers the genetic evidence to be incomplete. It is entirely probable that both geneticists and biochemists will find that they may wish to argue with some details of this classification. Such argument would merely underscore the author's observation that this is a rapidly expanding field of knowledge in which rapid progress can be expected and which now offers a wealth of opportunity for multidisciplinary research.

The division of the 84 disease processes discussed into chapters is somewhat arbitrary. For each condition a summary is given of the clinical features, the mechanism of inheritance, the pathogenesis from the biochemical viewpoint and, usually, a brief statement on diagnosis and treatment. A few references are given at the end of each section and these are usually well chosen and include a number of summary papers that provide additional bibliographic material. Some readers may wish for more extensive documentation. The appendix represents a useful innovation. An extensive listing is given of laboratory procedures that have been used for diagnosis of the specific conditions discussed.

These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

For each test, a reference is given to a basic paper describing the use of the procedure in detail. The appendix gives in summary form the method to be followed, specifying reagents and similar details, and also indicates which of these procedures has proved to be satisfactory in the author's laboratory.

The author has done an excellent job of summarizing the present state of knowledge in a field that is rapidly expanding and changing. A critical reading will reveal a few statements that are open to question, and in a few instances both sides of controversial questions may not be adequately presented. Such minor defects should not be allowed to detract from the obvious merit of a book that should prove useful to both clinicians and research investigators.

Coronary Heart Disease. By John William Gofman, M.D., Ph.D., Professor of Medical Physics, Donner Laboratory, Division of Medical Physics, Department of Physics, University of California, Berkeley. Cloth. $8. Pp. 353. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1959.

This book is intended for the practicing physician and as such it must be considered a propagandistic, doctrinaire, and sophistic document. The author sets out to test those clinical measures which, in his view, have statistically supported significance in indicating future overt coronary heart disease without regard to the mechanisms involved. He proposes to use two: the diastolic blood pressure and the atherogenic index. The latter was set up by the author and his associates from the distribution of classes of lipoproteins separated by the use of the ultracentrifuge. He argues that these two indexes, when combined, predict the risk (which he carefully defines) of the future occurrence of clinical coronary heart disease. When these indexes are added year by year, their cumulative value is even better as a warning of risk than that of any single reading. He states that family background, age, sex, weight, diet, cigarette smoking, diabetes mellitus, and thyroid disease do not operate as such but determine risk primarily through their influence on the atherogenic index and the diastolic blood pressure. Occupation, stress, and physical exercise, according to the author, also operate through these two indexes, although physical activity appears to play an additional role.

His argument that the atherogenic index is better than the serum cholesterol level for practical purposes is not widely accepted and can be said to be almost uniquely identified with the author. This does not mean that the study of the various classes of lipoproteins is not a valuable research tool which has greatly advanced our knowledge. The work of many, including that of the author, has clearly proved otherwise. However, it does not follow that this makes it a better index than the blood cholesterol level, which is much simpler to determine.

It is also not generally believed that high carbohydrate diets are, under certain circumstances, highly atherogenic—a view propounded by the author. Except for the foregoing objections, the book conforms to generally accepted views on coronary heart disease. Because of these exceptions and because of bias subtly woven into the content, this volume cannot be recommended for the practitioner who has little knowledge of the recent advances in the field of atherosclerosis. However, it is recommended for the knowledgeable physician and for the student and investigator of atherosclerosis, since it gives an excellent summary of the work and views of the author. Some effort will be involved in reading the book because of the argumentative style and the extraordinary length of many paragraphs.

Diseases of the Nose, Throat, and Ear. Edited by Chevalier Jackson, M.D., Sc.D., LL.D., and Chevalier L. Jackson, M.D., M.Sc. F.A.C.S., Professor of Laryngology and Broncho-Esophagology, Temple University Medical Center, Philadelphia. With collaboration of sixty-one outstanding authorities. Second edition. Cloth. $20. Pp. 886, with 1193 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, England, 1959.

This textbook first appeared in 1945. It was intended to be "in a form most practical for those interested in these specialties, be they students, teachers, specialists or general practitioners." It was an impressive achievement, and the current editors were assisted by a large and able group of authorities. The late Dr. Chevalier Jackson is represented here by over 30 discussions in a field he largely helped to make, i. e., that of bronchology and esophagology. Those unacquainted with the history of these two areas can easily overlook the magnitude of his contribution. A large part of it is accepted by many as part of the body of general knowledge, without any thought of its originator. Dr. Jackson, almost singlehandedly, developed this art at a time when the general level of training and excellence in this specialty was not high in America. He brought it to its present state and to worldwide recognition.

It is gratifying to note that many of the original contributors are still present. Some are absent, presumably due to retirement or death, and so of necessity new faces have appeared. Some of these present new topics, such as the operation of stapes mobilization for the treatment of hearing loss due to otosclerosis. Textbooks of this type often suffer from the handicap of insufficient space. This has, in this new edition, been largely overcome by careful editing, so that it is only slightly larger than its predecessor, even though it includes consideration of all the advances of the past 15 years.

Among the truly notable discussions presented here are those on corrective plastic surgery of the nose and on functional alterations from sensory-neural lesions in the hearing apparatus. This textbook deserves the highest recommendation and should be on the shelf of each person interested in the field which it so adequately covers.

Survey of Clinical Pediatrics. By Lawrence B. Slobody, M.D., Professor of Pediatrics, New York Medical College, New York City. Third edition. Cloth. $11. Pp. 556, with illustrations. Blakiston Division, McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36; 95 Farringdon St., London, E. C. 4, England; 253 Spadina Rd., Toronto 4, Canada, 1959.

In his preface the author states: "This survey of clinical pediatrics is not intended to replace the excellent large textbooks that are now available. It is rather designed to help the student and practitioner focus on the high lights and relationships of pediatrics." Study of the book shows that the author has done this job well in that he has taken the material of the usual textbook and boiled it down to about 20% of its original length. The volume covers the entire field of pediatrics. The presentations and discussions are brief, most of them in outline form. There are 34 tables dealing with such subjects as poisons, electrolyte solutions, formulas, exanthems, anemias, and hemorrhagic disorders. An effort has been made to present recent advances and, where there is controversy, the author has attempted to give the majority opinion. In some instances there may be some disagreement with the conclusions of the writer, but this is to be expected where some argument needs to be sacrificed to conserve space.

At the end of each chapter a group of review questions are presented. These are of an objective type. To answer them requires specific knowledge of the contents of the chapter as well as general information in pediatrics. A study of these questions is good mental exercise for anyone dealing with children and should be of particular value to persons preparing for an examination. Well-organized and well-written, this book should be of much help to the practicing physician, the intern, and the medical student who wants a survey rather than a detailed discussion of pediatric problems.

Hypertensive Disease: Diagnosis and Treatment. By Sibley W. Hoobler, M.D., Associate Professor of Internal Medicine, University of Michigan Medical School, Ann Arbor. Cloth. $7.50. Pp. 353. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1959.

This book was written to aid physicians in their treatment of hypertensive disease. The material is described under the headings secondary hypertension susceptible to cure and not susceptible to cure, primary hypertension, principles underlying treatment, and specific treatments; 12 appendixes are added. The success or failure of this volume will depend on whether it proves useful to the busy practitioner, since no attempt has been made to evaluate critically or document the evidence on which recommendations for treatment are made. The result is a highly personal book.

In general the writing is clear, if prolix, and the suggestions for treatment are for the most part adequate. The references are capriciously used and might better have been omitted. For example, the heading of appendix 7 refers to the use of chlorothiazide and ganglion-blocking agents in boldface type; just why is far from clear. Appendix 10 seriously recommends dihydrogenated ergot alkaloids as therapeutic agents worthy of two pages, while the same amount of space in another appendix covers chlorothiazide, reserpine, hydralazine, and ganglion-blocking agents. Why?

There is a need for books treating the subject of hypertensive diseases for the use of practitioners, but such books are difficult to write because they must be short, crystal clear, and exhibit the most mature judgment in the presentation of the pertinent aspects of the subject. Unfortunately this book does not live up to these requirements. The book is well made and the price reasonable.

Roxburgh's Common Skin Diseases. Revised by Peter Borrie, M.A., M.D., M.R.C.P., Physician for Diseases of Skin, St. Bartholomew's Hospital, London. Eleventh edition. Cloth. £1.17. 6d. Pp. 495, with 224 illustrations. H. K. Lewis & Co., Ltd., P. O. Box 66, 136 Gower St., London, W. C. 1, England, 1959.

The popularity of this compact volume is attested to by the fact that it is now in its 11th edition. Written as a practical book for general practitioners and students, it discusses primarily the common skin diseases from the standpoint of differential diagnosis and forms of treatment available to the general practitioner. The indications for more specialized treatments are listed and the results to be expected are outlined. The descriptions of the diseases are concise and readable, and there are useful sections on therapy which have been kept up to date. While the book is written by British dermatologists the American reader should have no difficulty with the pharmacological terminology, since only an occasional British trade name is used. Each section is illustrated with black and white clinical photographs of excellent clarity and detail. The text includes a brief index of differential diagnosis based on the morphology of the presenting lesions, which should be helpful to the student unfamiliar with dermatological nomenclature.

In this revision new paragraphs have been added on drug eruptions, nickel dermatitis, Kaposi's varicelliform eruption, Trichophyton rubrum infections, and skin planing. Major alterations have been made in the sections dealing with the general use of drugs, including steroid hormones, and in the sections on lupus erythematosus, impetigo, varicose veins, rosacea, fungous infections, tuberculosis of the skin, and dermatitis herpetiformis. The chapter on syphilis has been rewritten and reillustrated. Other illustrations have also been added. This edition should receive the same enthusiastic reception as its predecessors.

Les Cataractes congénitales: Rapport présenté à la Société française d'ophtalmologie, le 12 mai 1959. Par Jules François, professeur de clinique ophtalmologique à l'Université de Gand. Paper. 11,000 francs. Pp. 853 with 506 illustrations. Masson & Cie, 120, boulevard Saint-Germain, Paris 6e, France, 1959.

This monograph is the most recent in the annual series of reports presented to the French Ophthalmological Society. It continues the high standard of excellence established by its predecessors and is a monumental work covering all facets of congenital cataract from the embryology of the normal lens to the postoperative care of the surgically treated patient. In addition to a detailed description of the various types of congenital cataract, several chapters are devoted to general systemic diseases that are associated with it. One chapter deals with illnesses of pregnancy that have been reported to result in cataract formation in the embryo. The section on surgical treatment of congenital cataract is of particular value. One may differ with the author when he states that patients with vision of better than 0.3 (20/70) should not undergo operation since "vision of 0.4 (20/50) with accommodation is better than 0.9 (20/25) without accommodation," but one cannot argue with his plea for conservation in general. Unfortunately, in infants it is impossible to gauge accurately the visual acuity, and here clinical judgment is essential. The author believes that operation should be performed early in patients with complete cataracts to prevent the development of amblyopia. He states that the optimal age is between six months and two years. The various procedures available are well illustrated and evaluated. For the French speaking ophthalmologist this book should be of great value. It is hoped that an English translation will be forthcoming soon.

Medical Museum Technology. By J. J. Edwards, Chief Technologist, London Hospital Medical College Museum, London, M. J. Edwards. Cloth. $3.40; 21 shillings. Pp. 172, with illustrations. Oxford University Press, Amen House, Warwick Sq., London, E. C. 4, England; 417 Fifth Ave., New York 16; Amen House, 480 University Ave., Toronto 2, Canada, 1959.

The term "medical museum technology" is defined by the authors to comprise the preservation of all forms of tissue for teaching purposes or research. The first part of the book is historical, dealing with early methods of preparation and preservation of tissues. The collections of Alexander Monro, John Hunter, Thomas Pole, and F. J. Knox are described. Many of the early medical museums dealt with natural history, medicine sometimes being incidental. With the discovery of formalin preservation, new impetus was given to the preservation of tissue. The last part of the book is devoted to detailed methods used by the authors for the preservation of specimens, including liquid mounting, color injection, the use of plastics, maceration and articulation of bones, the preparation of casts, and the making of transparencies. A final chapter deals with the organization of a modern medical museum for teaching purposes. This book should be of interest to medical historians (there are 213 references) as well as to pathologists and others working with the preservation of tissues.

Clinical Dermatology for Students and Practitioners. By Harry M. Robinson, Jr., B.S., M.D., Professor of Dermatology and Head of Division of Dermatology, University of Maryland School of Medicine, Baltimore, and Raymond C. V. Robinson, B.S., M.D., M.Sc., Associate Professor of Dermatology, University of Maryland School of Medicine. Cloth. $8.50. Pp. 242, with 117 illustrations. Williams & Wilkins Company, 428 E. Preston St., Baltimore 2, 1959.

Years of teaching experience are reflected in this book designed for students and practitioners. The objective is achieved with a format similar to an expanded outline and with a noncontroversial approach to diagnosis of disease and treatment. Excellent illustrations and charts are distributed liberally throughout the text. Instructions and information are stated clearly and concisely. There are no references, but it is clearly implied that the book is intended to complement a larger text. The beginning consists of general background knowledge: anatomy, physiology, allergy, mycology, therapy, and related subjects. Most of the book is devoted to specific diseases discussed under regional involvement, morphologic groups, and those involving cutaneous appendages. All the information is readable and presented at the medical student's level in orderly, informative, brief, yet interesting fashion. The material is current.

Freedom from Fear. By Lester L. Coleman, M.D. [Second edition.] Cloth. $4.95. Pp. 293. Hawthorn Books, Inc., 70 Fifth Ave., New York 11; McLelland & Stewart, Ltd., 25 Hollinger Rd., Toronto 16, Canada, 1959.

The revised and expanded edition of this book continues the favorable climate of knowledgeableness that characterized the first book at the time of its publication. Since no single person is ever completely free from fear, this book serves a useful function in explaining, interpreting, and perhaps abolishing some of the common insecurities that trouble men and women in what has been called the age of atomic anxiety. As a readable work, it is highly recommended.

QUESTIONS AND ANSWERS

ESTIMATING PENICILLIN DOSAGE

To the Editor:—*What method is recommended for estimating the dosage of penicillin? Is the weight considered primarily? Is age important?*

Roy Lynde, M.D., Ellendale, N. D.

Answer.—The type of infection being treated, the kind of preparation, and the interval between injections are apt to be more important than the weight or size of the patient in determining penicillin dosage. This is particularly true since with most penicillin-susceptible infections we are apt to use overdosage because the drug is inexpensive and reactions are due to allergy rather than toxicity. Size of adults within wide limits is usually not considered, unless the adult is very large and the presence of a relatively resistant organism makes the attainment of unusually high blood levels important. Size is considered in children, particularly smaller children. The American Academy of Pediatrics recommends for intramuscular dosage of procaine penicillin G 10,000 units per pound of body weight, or 100,000 to 300,000 units per day, and for benzathine penicillin G 600,000 or 1,200,000 units in a single injection.

EMERGENCY THORACOTOMY AND CARDIAC MASSAGE

To the Editor:—*What are the indications for emergency thoracotomy and cardiac massage? The question arises because of two incidents reported in newspapers. In each, citizens of some prominence collapsed at public gatherings. Doctors were called, and in each case the presumptive diagnosis was coronary occlusion. Jackknife thoracotomies were performed, but despite cardiac massage both patients died. In your opinion, is such a gesture ever worthwhile outside a hospital? For example, if I as a radiologist encountered cardiac arrest in a patient while performing an excretory urogram in my office, could I be charged with negligence if I failed to open the patient's chest and massage his heart?*

John L. McClenahan, M.D., Philadelphia.

Answer.—It seems reasonable to state that emergency surgery for cardiac arrest should be performed only where operative facilities are available. These may be provided by a hospital, an emergency room, the surgeon's office, or a well-set-up aid station. It is unlikely that suitable facilities will be found on the golf course, at the roadside, in a banquet hall, or in public buildings. The present use of emergency penknife thoracotomies is an inevitable aftermath of lay publicity that has attended well-founded operations for cardiac emergencies. Not too many years ago, emergency tracheotomy was in vogue and occasionally was carried out by an aggressive bystander with somewhat questionable indications. This procedure is performed rarely now except in the hospital.

Treatment of unexpected cardiac arrest requires more than thoracotomy and cardiac massage. Proper oxygenation of the helpless patient must be provided, as well as other supportive measures, or the spectacular slash and the dramatic assault upon the flaccid myocardium accomplishes little. Although the number of emergency thoracotomies performed under such exotic circumstances has not been recorded, it is safe to assume that over-all results are not impressive. With sober reflection, it appears that the hysterical application of a sound principle in resuscitation may do more harm than good. It is agreed that every physician should understand the general principles of cardiac resuscitation and that the responsible physician in charge of any type of emergency situation must exercise his own best judgment. He alone must assess the emergency situation, and, if cardiac arrest has occurred, decision to operate must be based on facilities at hand and the chance for success. The diagnosis of sudden death is not in itself an indication for emergency thoracotomy.

A consultant's opinion on legal implications in this type of situation is as follows:

Answer.—The law requires that a physician who undertakes to treat a patient must possess a skill, and exercise the care commonly possessed and exercised by other reputable physicians in the locality. If he holds himself out as a specialist, he must meet the standards of a specialist in the designated field of practice. His duty is not changed even if his professional services are rendered gratuitously. It follows that no malpractice charge is justifiable unless the physician's service to the patient does not meet the requirements of good medical practice; unless, in diagnosis and treatment services, the physician fails to do something he should do, or does something he should not do in terms of accepted standards of practice.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

There is frequently a wide honest difference of opinion, and the attending physician must exercise his best judgment in deciding what to do in a given situation. A physician is justified if his conduct in a given situation would be approved by even a respectable minority of his fellow practitioners in the same locality. He may make a mistake, or be guilty of an error of judgment; he may obtain a bad result instead of a satisfactory one; but none of these is sufficient to fasten on him the charge of malpractice.

Generally, a physician has no legal obligation to treat a stranger whom he has not accepted as a patient. If an emergency occurs at a public gathering, the physician has no legal obligation to treat the victim. However, in this consultant's opinion, there is an ethical and moral obligation on the physician to render emergency treatment where the life of the victim is at stake. Once the physician undertakes to render emergency treatment, he may be held liable for possible malpractice.

If a radiologist should encounter cardiac arrest in a patient while performing an excretory urogram in his office, he should recognize that a physician-patient relationship exists. He cannot choose to ignore the patient merely because the emergency treatment is in a field other than his specialty. The radiologist should act in the same manner and conform to the same standards which are expected of reputable physicians in the community. This means that he need not open the patient's chest and massage the heart if standard medical practice in the community does not include emergency treatment of this type in a physician's office. Some physicians are excessively aware of their legal obligation to the patient and may misconstrue this. Fundamentally, the physician's legal obligation is to practice good medicine. If he does this, he usually will find that his moral and legal obligations are fulfilled.

RECURRENT ORAL ULCERS

To the Editor:—*A 23-year-old female, who has one child, has a negative history except that she has had recurrent ulcers of the mouth since she was a child. If there are several present, she may have slight fever. Her grandmother, mother, and two sisters have all had oral ulcers intermittently throughout their lives. None of the male members of the family has had such a lesion. The patient is in excellent health otherwise. The ulcers are shallow, tender, and painful. They measure from 1 or 2 mm. to 1 or 2 cm. in their greatest diameter. Please discuss diagnosis and therapy.*

Dale C. Hager, M.D., Beaumont, Texas.

Answer.—Diagnosis of recurrent aphthosis is based primarily on the appearance of the clinical lesions and the course of the disease. Exclusion of other ulcerative diseases of the mouth is important in substantiating the clinical impression. The cause of recurrent aphthous stomatitis is not known. A viral etiology has been postulated. This, however, has not been substantiated by investigative workers. Sensitivity to certain foods and drugs, as well as emotional stress, has been noted to precipitate these attacks. Chocolate, nuts, and barbiturates may produce the reaction, which is often called erythema multiforme when produced by a drug.

Other conditions which produce ulcerations of the mouth, such as syphilis, moniliasis, ulceromembranous stomatitis (Vincent's disease), and so-called electrogalvanic ulcers, must be considered in the diagnosis. These conditions ordinarily do not produce recurrent problems, however. When the ulcerative condition of the mouth is associated with ulcerations of the genital area and involvement of the eye, it is termed Behçet's triple-symptom complex. Severe aphthosis has been called periadenitis necrotica mucosa recurrens by Sutton.

Important in the care and treatment of recurrent aphthosis is maintenance of proper nutrition. Pain-relieving solutions can be used in the mouth prior to meals and a soft diet followed. A tripelennamine solution held in the mouth for 15 minutes before eating should suffice. Pyridoxine ointment and chlortetracycline mouthwash have been advocated as topical therapy. Due to the postulated viral etiology, repeated smallpox vaccinations, poliomyelitis vaccinations, and administration of gamma globulin have been advocated for prevention of further attacks. However, therapy in most cases is discouraging.

SCHOOL TUBERCULIN TESTING

To the Editor:—*In our tuberculin-testing program we have limited the testing of children to the junior class of high school. They have been tested both by the purified-protein-derivative routine and also by mass x-rays on the small film. We would like to resolve the controversy that has arisen in our school system as to the relative merits of the above procedures. Does one have any advantage over the other?*

Raymond T. Houle, M.D., East Hartford, Conn.

Answer.—At the present time it is the recommendation of leaders in the field of tuberculosis control that the tuberculin status of a child be known on his entrance into kindergarten or first grade and every four years thereafter. X-ray studies are limited to those having a positive tuberculin test. It is common practice at the present time not to x-ray high school students routinely, because of the low productivity of cases. In many areas of the country, it is recommended that a small screening chest x-ray be made once during the high school period to discover possible congenital abnormalities or any other defects which might not be found on physical examination but should be a part of a complete health record. The testing program described may be incomplete if it does not allow for testing of new admissions to the schools each year.

For tuberculin testing, use of a single intradermal dose of intermediate strength containing 0.0001 mg. of purified protein derivative (5 tuberculin units) or 0.1 mg. of old tuberculin is recommended for case-finding programs unless there is a history of tuberculosis in the family, in which case a weaker solution would be used in the original test. Once the school record reveals a postitive tuberculin test, the test is not repeated. Since the incidence of active tuberculosis in the average high-school-age population is exceedingly low in most areas of the country, the tuberculin test procedure is fairly well agreed on by school physicians as the method of choice in tuberculosis case-finding programs.

STATUS OF ELECTROMYOGRAPHY

TO THE EDITOR:—*I should like to inquire as to the status of electromyography in the diagnosis of peripheral and central nerve lesions. I am particularly interested in its effectiveness in differentiating disease of the nerve itself from external pressure such as tumors or disk abnormalities. I should appreciate information as to references on evaluation of electromyography.*

M.D., Washington.

ANSWER.—The recording of spontaneous or induced electrical activity or action potentials by means of electromyography does permit differentiation of central and peripheral nerve lesions in many instances. Neurogenic lesions that irritate or produce denervation of motor units are distinguished by the presence of fibrillation and fasciculation potentials, as well as by variations in amplitude, duration, distribution, and complexity (i. e., polyphasic forms) of the potentials. Localized lesions such as a tumor or a ruptured disk would produce segmental electromyographic abnormalities in the motor distribution of the involved roots.

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BLOOD-TINGED SEMEN

TO THE EDITOR:—*A man, aged 50, about a year and a half ago noticed blood-tinged semen in the condom after intercourse. He has had recurrence since then; recently there was considerable blood. Urologic examination a year ago, including cystoscopy, was normal. What may cause such bleeding? Is specific treatment indicated?*

Jerome Kogan, M.D., Stamford, N. Y.

ANSWER.—Blood in the semen (hemospermia or hematospermia) is due almost exclusively to inflammation of the mucosa of the seminal vesicles; i. e., chronic or subacute seminal vesiculitis. It may be associated with neoplasm of the seminal vesicles, but such neoplasms are extremely rare. The condition is particularly prone to recur. As a rule, it is of no consequence. Seminal vesiculitis is most commonly caused by a low-grade hematogenous or blood-borne infection. Except in the case of obstruction of the seminal ducts, it rarely causes clinical symptoms. One can make the diagnosis by a careful rectal examination. The seminal vesicles are not indurated, but strippings in between times usually show some old oxidized blood with a considerable mixture with various types of sperm. One finds this in persons who have no evidence of focal infection. It is important to have definite proof that seminal vesiculitis is the cause of hemospermia. A satisfactory method is to have the patient come to the office with a full bladder. The prostate and seminal vesicles are stripped completely but gently rectally. Then a midstream specimen of urine is sent for laboratory culture and analysis. About 50% of these patients will show no growth from these specimens. The other 50% will show, as a rule, hemolytic or nonhemolytic coccic infection.

STERILIZATION STANDARDS

TO THE EDITOR:—*The National Presto Industries, of Eau Claire, Wis., puts out an appliance advertised as being effective as a sterilizer utilizing either dry heat, boiling, or as an autoclave, and they state it is effective against spore-bearing bacteria. Can you tell me whether it is satisfactory? Does it meet the standards of sterilization of the Pharmacopeia of the United States?*

Lester J. Candela, M.D., New York.

ANSWER.—The Pharmacopeia of the United States (15th revision, page 828) states: "The preparation of sterile products requires intimate knowledge of the equipment being used and of the stability of the product being processed. The processing requires vigilant supervision of equipment and procedures by personnel well trained in devising and applying methods for attaining sterility, and adequate proof of the effectiveness of procedures used." There is no reason to doubt that the electric unit supplied by National Presto Industries, Inc., would fulfill the requirements mentioned provided it is mechanically sound, its instrumentation accurate, and the process applied by well-trained personnel.

The manufacturer provides clear-cut directions for operating the unit, including statements of temperatures and times for sterilizing by steam under pressure, hot dry air, and boiling water (used only if techniques do not require the elimination of heat-resistant bacterial spores). Their brochures do not include microbiological data, but they may have evidence of satisfactory results with "spore strips" and similar indicators. Their recommended cycles for sterilization of syringes, needles, glass, rubber goods, instruments, utensils, dressings, and linens are stated. The size of the unit's container, diameter 8.5 in., depth 4.5 in., may limit its use in some situations. This disadvantage would appear to be offset by the claimed rapidity with which the unit reaches required temperatures.

SUSPECTED CONTAMINATION OF SOFT DRINK

To the Editor:—*A woman consumed a soft drink, obtained from a vending machine, which was said to be contaminated with insects, thought to be cockroaches. About 24 hours later, she stated that she developed nausea, vomiting, and generalized abdominal pain. There was blood in the vomitus, and she vomited several times. No diarrhea developed. Examination revealed epigastric tenderness and a temperature of 100 F (37.8 C). The patient complained of intermittent abdominal pains for several weeks. Otherwise she responded well to conservative medical measures. Could this situation have been responsible for the symptoms and findings described? What could have been the cause—bacteria, toxins, or perhaps some chemical that was absorbed? Could this clinical picture have had a functional basis? Are vending machines considered safe containers for soft drinks?* *M.D., Illinois.*

Answer.—The fact that the patient was not ill until 24 hours after taking the soft drink would exclude a psychogenic reaction from associating insects with it. Roaches in a soft drink would not per se be responsible for the symptoms and findings described. Roaches may carry microbial contaminants on their feet and spread them to foods with which they come in contact. Without stool cultures it is impossible to rule out microbial foodborne illness.

Food-poisoning strains of staphylococci produce a poison (enterotoxin) when they have suitable conditions for growth in a food. Some human volunteers fed small doses of enterotoxin vomited without having diarrhea, whereas others had diarrhea without vomiting. However, in this type of poisoning the incubation period is one to five hours after eating food containing the enterotoxin. Food items eaten subsequent to consumption of the soft drink should be considered. Much study has been made of vending machines with relation to sanitation. In general, licensing is confined to machines meeting sanitary standards.

POSSIBLE CAPILLARY FRAGILITY

To the Editor:—*In a woman, a slight blow anywhere on the body causes black and blue spots, with no tenderness. They go away in a few days. What can she take to prevent this condition?*

Stanley W. Blanchard, M.D., Boston.

Answer.—The question suggests easy bruising and increased capillary fragility, but there is inadequate information to permit any speculation as to its pathogenesis, such as possible hereditary aspects, nutritional history with special regard to ascorbic acid, hypertension, and the particular location of the ecchymoses (body or extremities). It is also important to know whether the patient is experiencing other hemorrhagic phenomena such as epistaxis, gingival bleeding, or undue bleeding after cuts or in association with her menses. Important laboratory tests are needed, including bleeding time, platelet count, and the Rumpel-Leede test for capillary fragility.

Aside from a distinct coagulation defect or thrombocytopenia, a common cause of this type of easy bruising is subclinical scurvy, an entity all too frequently unnoticed in our generally well-nourished population. For one reason or another, many persons place themselves on vitamin C–deficient diets because of the idea that the ascorbic acid–containing foods disagree with them or for some other unrelated reason. This can be readily rectified by the administration of vitamin C. No other therapeutic agent useful in combating increased capillary fragility is known, unless it be the steroids, which are reserved for clear-cut thrombocytopenic purpuric bleeding.

PULMONARY FUNCTION STUDIES

To the Editor:—*As hospital anesthesiologist, I have been receiving requests for pulmonary function studies. Can you offer suggestions as to apparatus required and its cost?*

William B. Adams, M.D., Muncie, Ind.

Answer.—Each year at the A. M. A. convention in June, a demonstration is held continuously under the direction of Dr. Meneely on pulmonary function testing. Specialists in the field give demonstrations and are available for discussion. It is recommended that you attend such a demonstration. If this is impossible, you can obtain as references "The Lung: Clinical Physiology and Pulmonary Function Tests," by Comroe and others, and "Methods in Medical Research," vol. 2, edited by Comroe, both published by the Year Book Publishers, Inc., Chicago.

The primary instrument for pulmonary function studies should be a recording spirometer with fast-speed drum and larger capacity than the usual closed-circuit basal metabolic rate machine. With such an instrument, one can become familiar with breathing patterns, vital capacity measurements, various timed vital capacity methods, and recording of maximum breathing efforts in various types of disease. After experiments with this equipment, one can judge his own need for additions of procedures and equipment in line with requirements and interests in his own area. Warren E. Collins, Inc., 555 Huntington Ave., Boston 15, makes 9-liter and 13.5-liter capacity units costing $550 and $750 respectively. If simpler and more portable apparatus is desired, the McKesson Vitalor, priced at $127, can be used for limited observations. It should be noted, however, that simple equipment is usually best used for special applications by someone already familiar with pulmonary function testing.

CONVULSIVE SEIZURES

To THE EDITOR:—*A 42-year-old male who had gone to bed suddenly had a strong urge to defecate. He remembered nothing further, but his wife stated that he shook all over and became unconscious for a few minutes. The patient recalled a similar episode about two years previously. There is a history of a skull fracture at the age of 9 without apparent residual effects. While examining the patient, I felt a mild electric shock through my fingers. He had an electric blanket over him and was naked from the waist up. This sensation left when the blanket was unplugged. The patient's only complaint was backache. His sensorium was clear, and he had not been drinking. Office examination a few days later failed to reveal any pathology. An electroencephalogram (EEG) was reported as normal. I thought he had had an epileptic seizure, but, with the normal EEG and the strange shock from his blanket, I wonder if he could have been shocked into a convulsion? Could an epileptic seizure be triggered by an electric blanket?*

John B. Umhau Jr., M.D., Chevy Chase, Md.

ANSWER:—This question was discussed with several experts in physical medicine and by a neurologist interested in convulsive seizures. The control box of the standard electric blanket contains a transformer that reduces the alternating household current from the usual 115 volts at the outlet to 18 volts at the blanket. In electroshock therapy it is necessary to apply much higher voltages, with firm electrical contacts on each side of the skull, in order to produce a convulsion, and the experts consulted do not believe the voltage from an electric blanket would produce such convulsions or trigger an epileptic seizure. About 10% of epileptics have normal EEG's at one time or another. It would be logical to ignore both the electric blanket and the EEG and to consider this to have been a convulsive seizure of the usual sort, the etiology of which is often obscure.

GRITTY SENSATION IN MOUTH

To THE EDITOR:—*A woman, 72 years of age, for the past two years has had a gritty sensation in her mouth, particularly around her lower dentures, which are the plastic type. She has worn dentures since age 45. An allergist has found no sensitivity to such dentures or other substances. She has diminution of saliva and complains of dryness in the mouth which is relieved for only a few minutes by taking food or liquids. Her general health is good except for moderate hypertension. There is no swelling or tenderness of the parotid glands, and the ducts are not palpable. I will appreciate suggestions on etiology and therapy.*

M.D., North Carolina.

ANSWER.—If these are the original dentures, undoubtedly some resorption of the alveolar ridges has occurred. This would make for improperly fitting dentures, which would cause irritation and inflammation. Also, unless scrupulous cleanliness has been observed in care of the dentures, deposits of salivary calculus may have formed on them, creating the sensation of "grittiness" of which the patient complains. A third point is that at this patient's age there undoubtedly is some atrophy of the salivary glands, with diminution in salivary flow. Decreased salivary flow is also seen as a postmenopausal symptom and in aged people, in general. The treatment should consist of new dentures, if her present ones do not fit properly; use of a mild sialagogue, such as pilocarpine hydrochloride, to promote flow of saliva; and scrupulous cleanliness in care of the dentures to avoid the deposition of salivary calculus.

USE OF FIRST-AID ANTISEPTICS

To THE EDITOR:—*Please let me know if Bactine is as effective as thimerosal tincture.*

L. G. Haupt, M.D., Chicago.

ANSWER.—Bactine contains as its active ingredients methylbenzethonium chloride, polyethylene-glycol mono-iso-octyl phenyl ether, chlorothymol, and alcohol. As such, it is known to possess antiseptic properties which may be of some value in first-aid care of minor injuries. No studies have been seen comparing the efficacy of Bactine with that of other agents commonly employed as first-aid skin antiseptics. Some authorities believe such agents are unnecessary for application to minor injuries as a first-aid measure and simply advise thorough cleansing with ordinary soap and water without the application of disinfectants. For general information on the subject of skin disinfection, see the notes that appeared in THE JOURNAL (158:619-620 [June 18] 1955; 119:759 [June 27] 1942). More comprehensive discussions will be found in standard textbooks such as those of Sollmann (Manual of Pharmacology and Its Applications to Therapeutics and Toxicology, ed. 8. Philadelphia, W. B. Saunders Company, 1957) and Goodman and Gilman (Pharmacological Basis of Therapeutics: Textbook of Pharmacology, Toxicology, and Therapeutics for Physicians and Medical Students, ed. 2, New York, the Macmillan Company, 1955).

INTERNAL MENSTRUAL TAMPONS

TO THE EDITOR:—*Some nursing schools in this locality have taught that use of internal tampons for menstrual hygiene is not wise, in that "they change the acidity of the vaginal secretions." Is there any evidence of appreciable change in vaginal secretion as a result of use of tampons or of an increase in incidence of vaginitis?*

Eugene M. Holden, M.D., Amherst, Mass.

ANSWER.—There is no proof that vaginal tampons adversely affect the vaginal acidity or secretions or increase the frequency of vaginitis. Brand (*Brit. M. J.* 1:24, 1952) studied 100 women who used vaginal tampons during 3 to 10 successive menstrual periods. Smears and cultures taken both before and after each period failed to show any appreciable change in the bacterial flora of the vagina. Likewise, there were no signs of local irritation or inflammation.

MARITAL STATISTICS

TO THE EDITOR:—*What are the statistics with regard to yearly marriages, yearly divorces (throughout the nation), the estimated number of marriages broken by desertion* (a) *through husbands leaving and* (b) *through wives leaving, the estimated numbers of marriages broken by separation* (a) *through the courts and* (b) *among Catholics, and the estimated number of children left in broken homes yearly? What are the statistics with regard to the percentage of women who are identified a "frigid" and men diagnosed as "impotent"?*

Edward Dengrove, M.D., Asbury Park, N. J.

ANSWER.—These vital statistics, of course, vary from year to year, and some are guesses at best. The National Office of Vital Statistics estimates the number of marriages in 1958 as 1,445,000. The number of divorces is close to 40,000 each year. There are no actual figures on the number of desertions and separations each year. A. C. Kinsey believed they total about the same as the number of registered divorces. The number of children affected each year by broken homes has been estimated at 150,000. Figures for frigidity and impotence are unknown and at best would depend largely on the definition of those terms; moreover, a woman may be frigid one year and not the next. At any one time, a conservative estimate would be that 25% of all wives are not sexually satisfied. The percentage of husbands who are sexually inadequate would probably be at least as large. The number of husbands who are completely "impotent" in the sense that they are unable to have sexual intercourse is very small—among men under 40 years of age, possibly not more than 1%. Among old men, on the other hand, "impotence" is naturally the rule. No figures on these questions are very meaningful unless carefully defined, and even then they are nothing but estimates based on various small samples.

PSYCHIATRIC CARE IN GENERAL HOSPITAL

TO THE EDITOR:—*A private general hospital is contemplating a 40-bed addition and is interested in making some of these beds available to psychiatric patients. At present, there are no facilities for hospitalization of psychiatric patients in this area. I would appreciate information on cost of constructing and running such a unit.*

Robert A. Richards, M.D., San Pedro, Calif.

ANSWER.—There is general acceptance of the principle that psychiatric care can be given advantageously in the community hospital. The open ward is coming more and more into favor, with two or three rooms specially furnished for the excited patient during the first two or three days of hospitalization. It is generally considered advisable to have three patients in a bedroom, where studio-type beds should be substituted for the standard hospital bed. Living quarters should be made as attractive as possible, and there should be space provided for occupational therapy, music therapy, and other activities that may be specifically suggested by the psychiatrist who will have the hospital service.

The cost of constructing such a unit compares favorably with the cost of constructing a patient floor for surgery or internal medicine. Recent figures published by the Public Health Service for Hill-Burton grant hospitals show the average cost of construction in 1958 was $19,000 per bed. The cost of operation also compares favorably with the cost of operating a general hospital. Since the patient-stay approximates 30 days as compared with 7 days for the average general hospital patient, the per diem cost is comparatively lower while the per case cost is, of course, higher.

REMOVAL OF SKIN DISCOLORATION

To the Editor:—*I will appreciate any ideas concerning eradication of skin discoloration from syphilis. I have been trying mercury ointment with very little success.*

J. E. Joice Jr., M.D., Warren, Ohio.

Answer.—It would be best perhaps to let time take its course. Mercurial ointment is frequently effective but, as in this case, not always. Ointment containing monobenzyl ether of hydroquinone has also been used with success, but warnings have been noted recently that there is a possibility that the depigmenting effect may get out of hand and the appearance of large areas of leukoderma may result.

"FIBROTIC" UTERUS AND FIBROID

To the Editor:—*Please advise how to differentiate a fibrotic uterus from a fibroid tumor. How large may a fibrotic uterus be in a patient aged 45?*

Aaron N. Gorelik, M.D., New York.

Answer.—The term "fibrotic" uterus is a misnomer. It does not represent a clinical entity. A physiological replacement of uterine muscle cells by connective tissue occurs after pregnancies, so that some small increase in uterine size can occur as the patient approaches the menopause. A fairly symmetrical enlargement of the uterus, rarely reaching the size of an orange, can occur as a result of adenomyosis. This diffuse enlargement may involve one wall or the entire uterus. The increased size of the uterus is the result of invasion of the muscle wall by endometrial tissue. The cut surface presents a whorl-like, trabeculated appearance with dark hemorrhagic or chocolate-colored areas of endometriosis. Myomas of the uterus are discrete tumors, invariably multiple, and most often in the wall of the uterine corpus. Their size and location vary widely, and their appearance may be altered by degenerative changes. Although a large tumor may symmetrically enlarge the uterus when it is located predominantly in the uterine wall, it retains its discrete character.

ROUTINE DENTAL X-RAYS

To the Editor:—*In view of the present trend away from annual routine x-ray examinations, please advise regarding recent opinions or policies in relation to the taking of routine dental x-rays once or twice a year.*

Sidney Franklin, M.D., Youngstown, Ohio.

Answer.—The practice of making routine x-ray examinations in dentistry varies. An initial, complete full-mouth x-ray examination is regarded as necessary to a proper dental diagnosis. Unless a particular disease or treatment requires otherwise, it is generally unnecessary to repeat the full-mouth examination oftener than at three-year or four-year intervals. However, it is considered good practice to make an annual x-ray examination of the teeth with use of the "bite wing" film technique, which permits x-rays of the crowns of both the upper and lower teeth on one side to be taken in a single exposure. In patients who have a high index of caries activity, it is often necessary to repeat the bite-wing x-ray examination every six months. It is of considerable advantage to detect and treat diseases of the teeth and their supporting structures at the earliest possible moment.

COLORLESS HAIR IN NEWBORN INFANT

To the Editor:—*A 33-year-old patient, gravida 2, para 1, had been taking prednisone for five years for rheumatoid arthritis. Therapy was stopped in October, 1958, when she was in the fourth month of pregnancy. She then began taking a succession of other drugs, including chloroquine; tablets of sodium salicylate, sodium* p-*aminobenzoate, and ascorbic acid; and chlorpromazine. In November, 1958, her hair began turning white at the roots and her eyebrows and eyelashes became white. This condition still persists. On March 3, 1959, she was delivered of a healthy female infant who appeared perfectly normal except that hairs in the eyebrows and eyelashes are colorless except for the ends, which are dark. Has this type of phenomenon been reported before? Will the baby continue to have colorless hair and, if so, can this be treated?*

Erie Dell Adams, M.D., Lubbock, Texas.

Answer.—Patients on chloroquine therapy have occasionally been known to have discoloration of the hair. However, on withdrawal of the drug, the pigment returns to normal. No case is known in which a healthy child born of a mother with white hair, eyebrows, and eyelashes has been born with colorless hair. The chloroquine might affect hair pigmentation in the offspring. The possibility of albinism must be considered.

RECURRENT ATTACKS OF GLOSSITIS

To the Editor:—*A female, aged 25, has recurrent attacks of glossitis associated with pain and burning sensations. The dental examination is normal. Smears of denuded areas are negative. It is felt that this is a form of allergy. Avoidance of coffee and tomatoes results in remission, but there has been recurrence.*

Nathan Sedofsky, M.D., Brooklyn, N. Y.

Answer.—There are many types and causes of glossitis. The description is most suggestive of so-called Moeller's glossitis. As a rule, in this condition there are intensely red, well-defined irregular patches in which the filiform papillae are thinned or absent and the fungiform papillae are swollen. Exfoliation of the superficial layer of the epidermis occurs in these patches. The condition is characterized also by burning, pain, and sensitivity to irritants. The condition is chronic but is characterized by remissions and exacerbations. The individual lesions may remain for long periods of time or regress and be replaced by new patches. The cause is unknown. Treatment is unsatisfactory, and the prognosis as to cure is poor.

ABSENCE OF FAT IN BODY

To THE EDITOR:—*Postmortem examination of a 48-year-old woman who died of lobar pneumonia revealed extreme wasting of subcutaneous tissues. The musculature was intact. There was no subcutaneous fat whatever, and the lobules of the breast stood out sharply. Further examination disclosed complete absence of adipose tissue on or within the internal organs. The heart was small. Microscopic examination showed total absence of adipose tissue in the breasts and only a few fat cells in the bone marrow. Please suggest possible causes.* *M.D., Florida.*

ANSWER.—Thorough search of the literature and correspondence with authoritative pathologists gives no indication of the existence of a condition in which there is an anomalous absence of fatty tissue as opposed to atrophy of intracellular fat. One pathologist has inquired whether the patient had ever been operated on and, in such case, if the condition noted at postmortem examination had been observed.

DROWNING IN FRESH WATER

To THE EDITOR:—*A young, healthy man died from pulmonary edema about three hours after what appeared to have been a satisfactory recovery from submersion for an uncertain period of time in fresh water (chlorinated swimming pool). Please give information concerning blood dilution, electrolyte changes, and hemolysis in similar cases. What treatment is suggested for this condition?* *M.D., Pennsylvania.*

ANSWER.—Death from drowning in fresh water is, in most instances, due to aspiration of a large quantity of liquid, which rapidly passes across the alveolar membrane and produces marked hemodilution. Within minutes, the sodium level may drop to 40 mEq. per liter. The hypotonic plasma produces rapid hemolysis, and potassium levels rise despite the hemodilution. Ventricular fibrillation due to potassium intoxication as well as to anoxia is a common cause of death, which often occurs within four or five minutes. Death may occur later as the result of pulmonary edema which is principally due to alveolar damage from struggling, aspiration, and anoxia. It should be emphasized that the alveoli are filled not with transudate but with a viscous, frothy fluid which contains large quantities of serum proteins. Congestive heart failure and neurogenic influences may contribute to the edema, and lower nephron nephrosis can be a late sequel.

Treatment should be directed toward restoration of respiration, with all possible speed, in order to correct anoxia. A blood count should be obtained and electrolyte levels measured. Partial restoration of normal values should be attempted by whole blood transfusion and administration of hypertonic sodium chloride solution (3 to 5%), with use of venesection to avoid hypervolemia.

References

Carsfill, J. W.: Treatment of Drowning, Medical World (London) **86**:545, 1957.

Swann, H. G., and Spafford, N. R.: Body Salt and Water Changes During Fresh and Sea Water Drowning, Texas Rep. Biol. & Med. **9**:356-382, 1951.

SURGERY IN INTRAVENTRICULAR ISCHEMIA

To THE EDITOR:—*A man, aged 49, has had intraventricular block since 1949 and on two occasions has experienced episodes of acute left ventricular insufficiency. At present he is under appropriate medical treatment and his condition is fully compensated. What is the possibility of cardiac surgery improving blood supply to that area of the heart?*

Ruben Gandelmann, M.D.
Rio de Janeiro, Brazil.

ANSWER.—As yet, no operation has been shown to increase the circulation to the interventricular septum. In fact, it is open to question if any operation as yet performed significantly increases the circulation to any portion of the myocardium, with the possible exception of thromboendarterectomy in certain carefully selected cases of coronary heart disease with angina pectoris.

INHERITANCE OF HYPOTHYROIDISM

To THE EDITOR:—*What are the chances of hypothyroidism developing in a newborn infant (first pregnancy) if the mother has been hypothyroid for many years? The mother has a basal metabolic rate reading of -12% after taking ¼ grain (15 mg.) of thyroglobulin three times a day for several years. Would another form of thyroid extract be more effective? Should a larger dose be used during pregnancy?*

Philip Leavitt, M.D., Surfside, Fla.

ANSWER.—Hypothyroidism during pregnancy does not produce thyroid deficiency in the infant except in those instances in which the mother has iodine deficiency. Goitrous cretinism, a rare familial disease, may be transmitted from the mother to her children. Thyroglobulin is as effective as other forms of thyroid substance in the treatment of hypothyroidism. In most instances, pregnancy is not an indication for increasing thyroid medication.

CHILDHOOD IMMUNIZATION SCHEDULE

To THE EDITOR:—*If a child receives one diphtheria-pertussis-tetanus injection and fails to return for 8 to 10 months, should the series be started anew, or may he take the second injection and go on from there? The same information is desired concerning poliomyelitis immunization. How long an interval is allowed between injections before the effect is lost?*

Jackson Herbert, M.D., Portsmouth, Ohio.

ANSWER.—Experience with diphtheria and tetanus toxoids has shown that satisfactory immunity is obtained when injections are given at intervals of not less than one month or more than three or four months. Pertussis vaccine gives best results when the interval between injections is not longer than six weeks. The length of time required for the effect of a single injection of vaccine to wear off is not precisely established but is probably a matter of months for the above vaccines as well as poliomyelitis vaccine. Two injections followed by a booster (at any interval) are effective for both tetanus and poliomyelitis. One injection in the first few months of life can be counted on to provide a minimal effect up to 8 to 12 months of age. It would seem satisfactory to finish the primary series with two injections with a quadruple antigen, if the child is under one year of age. The booster at 12 to 18 months would be given as usual. For children aged 1 to 7 it would probably be better to give a series of three injections of a quadruple vaccine followed by a booster of poliomyelitis vaccine in one year and a booster of quadruple vaccine at 4 to 5 years of age. The above suggestions are necessarily arbitrary but on the available evidence should produce satisfactory immunity without excessive duplication.

SJÖGREN'S SYNDROME

To THE EDITOR:—*The question concerning the treatment of a woman with rheumatoid arthritis and deficient salivation* (THE JOURNAL, *June 27, 1959, p. 1136) may have an answer in an article reported in the* British Medical Journal, *June 13, 1959, p. 1512. Antimalarial medication produced satisfactory improvement in 14 of 25 patients with Sjögren's syndrome. Antimalarial drugs have been given to patients with rheumatoid arthritis and systemic lupus erythematosus, and, since Sjögren's syndrome may be a related disease, these medicaments might improve the condition of the patient referred to in the original query. The British investigator noted, as did the consultant to* THE JOURNAL, *that no treatment for Sjögren's syndrome is entirely satisfactory.*

George X. Trimble, M.D.
1401 Chestnut Ave.
Long Beach 13, Calif.

SCIATICA

To THE EDITOR:—*I have read the question and answer relative to sciatica in* THE JOURNAL, *Feb. 28, 1959, page 1016, and wish to suggest a possible diagnosis and treatment. The nocturnal pain with little diurnal disability or discomfort has been observed by me in several patients. All have been men who have consistently carried articles such as pocketbooks, keys, and folded handkerchiefs in a hip pocket. Frequently the patient had been erroneously considered to have arthritis or other related diagnosis. The initial symptom is poorly localized pain, which may become severe at night. It is first noticed in the knee and thigh regions, and there is occasional spread into the hip region.*

The only positive finding consists of localized tenderness over the sciatic nerve with some duplicated pain on deep palpation between the ischiatic tuberosity and trochanter. The findings suggest physical trauma to the underlying nerve as the cause, and it has been of interest to find that the symptoms subside within a few days with removal of the offending pocket article and use of reasonable care to minimize local pressure to the area when sitting. The patient should be cautioned to avoid the error of transferring the contents to the other pocket. A folded handkerchief may produce symptoms on the opposite side during the treatment, since there is a shifting of weight in the sitting position from the painful side.

Edward B. Hopper, M.D.
Naval Supply Center
Oakland, Calif.

The above comment was referred to the consultant who answered the original question, and his reply follows.—ED.

To THE EDITOR:—*The observation is interesting. It is difficult to realize that in the standard suit an object in the hip pocket could produce a pressure neuritis of the type described. In neurological diseases where there is wasting of the gluteal muscles, a pressure neuritis of direct pressure on the ischiatic tuber or the emergence of the sciatic nerve at the sciatic notch has caused occasional pain and neuritic symptoms. The proof of the contention would lie in the immediate relief of pain by removing the objects from the pocket on the affected side; therefore, one must assume that this oddity exists.*

WASHINGTON NEWS

PHS Poliomyelitis Report . .
Medical Education Reformer Dies . .
Housing Bill Passed . .
Population Increase Seen . .
FDA Issues Warning . .
Federal Employees' Health Insurance . .
Civil Defense Funds Sought . .

GOVERNMENT STUDIES POLIOMYELITIS DATA

The Public Health Service declared that the sharply increased incidence of paralytic poliomyelitis this year is a cause for serious concern. "An explanation for this failure of effective control is urgently needed," said the agency's Communicable Disease Center in a report to health officers.

Although there were hopes for a progressive decline in the incidence of poliomyelitis, the rate this year will top that for the past two years and perhaps reach that for 1956, the agency said. However, with only preliminary data on hand, "evidence points strongly to the conclusion that the effectiveness of the Salk vaccine has been maintained.

"The possibility of a basic change in the ecology of the poliovirus deserves intensive study," said the report.

Until 1956, PHS pointed out, poliomyelitis attacked large areas, irrespective of race or socioeconomic status. However, since then, the incidence has been concentrated increasingly in slum areas, especially among Negroes.

"It is already clear that utilization of the vaccine in certain well-defined lower economic . . . ethnic groups has been wholly inadequate," the report stated.

"The excessive attack rates observed in some of these groups suggests the possibility of basic changes in the ecology of polioviruses such as the prevalence of particularly virulent strains or new and subtle social and environmental factors facilitating the spread of the virus in special groups. These possibilities warrant intensive study."

The report came as the incidence of poliomyelitis decreased for the second week in a row. For the week ending Sept. 12 273 paralytic cases of poliomyelitis were listed, compared with 291 for the week before. However, the total of paralytic cases through the latest week, 3,084, was higher than the 1,387 cases during the same period a year ago.

PHS noted that, as in previous years, the frequency of paralysis in relation to poliomyelitis vaccination remained consistent. Only 36% of persons who contracted poliomyelitis after four vaccinations were stricken with the paralytic type, compared with 79.3% of nonvaccinated persons.

For the year through the first week in September, 37.6% of persons with nonparalytic cases were those who had received three vaccinations or more; only 16.5% of the paralytic cases were in persons who had received three vaccinations. "The level of these frequencies," according to the report, "is markedly below the estimated levels of triply vaccinated persons in the population."

REFORMER OF MEDICAL EDUCATION DIES

Abraham Flexner, who helped reform medical education in this country almost 50 years ago, died in the Washington, D. C., suburb of Falls Church, Va., on Sept. 21 at the age of 92.

Known as "the father of modern medical education," Flexner in 1910 conducted an extensive investigation of 155 medical schools in the United States and Canada. His report charged that almost one-half the facilities were inadequate and were graduating poorly trained physicians. Only 31 schools were listed as completely acceptable in the "Flexner report."

The charges launched a revolution in medical education, with most of the unacceptable institutions closing down and other schools improving their standards. Flexner, an educator and not a physician, then developed a program for model medical training centers at universities. This was financed by the Rockefeller Foundation. Through the years, Flexner helped raise many millions of dollars for medical schools.

In 1936, the educator founded the Institute for Advanced Studies at Princeton University. A friend of the late Dr. Albert Einstein, he persuaded the physicist to come to this country.

HOUSING BILL BECOMES LAW

The catch-all housing bill, which set off one of the biggest debates of the session between President Eisenhower and the Democratic-controlled Congress, finally was signed into law after two previous housing measures had met vetoes.

The signature insured for this year a program aimed at encouraging construction of proprietary nursing homes. One provision of the bill authorized the Federal Housing Administration to guarantee private loans for construction of proprietary nursing facilities. Backed by the American Medical Association and the American Nursing Home Association, the plan is intended to stimulate private loans for such purposes and thus expand the number of homes.

Projects eligible for the program are those which state Hill-Burton authorities determine are in areas where there is a shortage of nursing-home facilities.

(Continued on next page)

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Lown, B., and Levine, S. A.: Current Concepts in Digitalis Therapy, Boston, Little, Brown & Company, 1954, p. 23, par. 2.

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REPORT POPULATION GROWTH RAISES DANGERS

A special congressional report recommended increased research on ways to curb an "explosive" world population that might reach 7 billion within 40 years. According to the study, made for the Senate Foreign Relations Committee by the Stanford Research Institute, "it is most likely that in the coming decade the explosive growth of population in many parts of the world will be accelerated by new scientific advances in public health and medicine."

The rising population, coupled with economic advancement and the competition of communist nations, "will lead to social unrest or even war unless the resources of science can be more effectively brought to bear on world problems of food, economic and social development, and population control," the report said.

"Current scientific developments indicate that a radical advance . . . such as a safe, effective, and inexpensive oral contraceptive could soon be available, if the comparatively small amount of research now under way in this field were stepped up," the report continued. "Greater than the physical and biological problems of birth control are the psychological and social problems to be solved, if population growth is to be checked by methods other than famine, disease, and war."

The most promising approach to date, the report said, is the development of an orally given contraceptive for women based on the ovulation-inhibiting effects of certain steroids. "Many scientists concerned with these problems believe that an inexpensive, easily used contraceptive with limited time effect and no adverse health effects could provide the means for effectively controlling population growth in those countries where national birth control policies are adopted."

The study noted that the Catholic Church permits the rhythm method under certain circumstances, and said, "It would seem reasonable that efficient rhythm birth control might be provided by a compound that would cause a slight ill-effect during the short monthly fertile period, making marital relations at least undesirable."

The study was issued as a matter of public information by the Senate committee and did not necessarily represent the views of any of the committee members.

FDA WARNS PUBLIC

The Food and Drug Administration asked all news mediums to publicize the following information:

"Women who have purchased the new 'Fashion Quick Salon-Tested Permanent,' manufactured by Richard Hudnut Company, are being warned by the company and the Food and Drug Administration not to use the product. It contains a neutralizer solution that is capable of causing severe and painful eye irritation lasting several days, should any of it get into the eyes.

"The manufacturer has done a good job of notifying retailers to stop selling the product and to put it aside until they can replace the neutralizer solution, but we are concerned about consumers who may already have purchased this product or who may buy it before it is taken off the shelves."

HEALTH INSURANCE BILL APPROVED

The House, by a top-heavy 382 to 4 tally, passed and sent back to the Senate a voluntary, contributory health insurance program that would cover an estimated 1,800,000 employees and their 2,700,000 dependents. Under the parliamentary procedure for the House amendments could not be offered. Many representatives had been prepared to attempt to add a program for already retired workers to the legislation.

However, it was still possible for such a program to be inserted in the Senate. Sen. Richard M. Neuberger (D., Ore.), chairman of a Senate post office and civil service subcommittee, held a one-day hearing on his own program for workers now retired.

The House bill was less costly to the government than the Senate version, calling for 107 million dollars annually compared with 145 million dollars, and did not contain some provisions of the Senate bill objected to by the administration. All affected organizations endorsed the legislation, including the American Medical Association, which also backed the principle of including the already retired under some voluntary programs.

EISENHOWER ASKS FULL CIVIL DEFENSE REQUEST

President Eisenhower urged Congress to appropriate the full 12 million dollars the administration sought to finance civil defense preparations by the various federal agencies. Congress had approved only 3 million dollars.

In a supplemental appropriations request for the remaining 9 million dollars the Chief Executive said, "Within the federal government there are departments and agencies peculiarly competent to cope with many of the diverse problems that would come with nuclear war. The request . . . *is for funds* to permit these specially competent agencies to contribute their experience, knowledge, and resources to the total effort required."

More than 4 million dollars of the supplemental money request was for the Department of Health, Education, and Welfare, with some of these funds earmarked for the U. S. Public Health Service for the training of civilian physicians in civil defense activities.

MISCELLANY

The House Judiciary Committe [illegible] tion establishing a National [illegible] Week. The American Medical Association's Committee on Toxicology backed the bill.

President Eisenhower signed into law bills increasing to three years presumption of service connection for multiple sclerosis and leprosy.

A board of 15 civilian and 2 military physicians has been appointed to compile the history of the Army Medical Service's role in internal medicine during World War II.

The House passed and sent to the Senate a two-year extension of the federal program to combat air pollution problems in urban areas. The bill authorizes 5 million dollars in federal grants annually for two years and extends the program, which was scheduled to expire June 30 next year.

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MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. F. J. L. Blasingame, 535 North Dearborn St., Chicago 10, Executive Vice-President.
1959 Clinical Meeting, Dallas, Texas, Dec. 1-4.
1960 Annual Meeting, Miami Beach, Fla., June 13-17.
1960 Clinical Meeting, Washington, D. C., Nov. 29-Dec. 2.
1961 Annual Meeting, New York City, June 26-30.
1961 Clinical Meeting, Denver, Nov. 28-Dec. 1.
1962 Annual Meeting, Chicago, June.

AMERICAN

1959

October

Academy of Psychosomatic Medicine, Sheraton-Cleveland Hotel, Cleveland, Oct. 15-17. For information write: Dr. Bertram B. Moss, Suite 1035, 55 E. Washington St., Chicago 2, Secretary.

American Academy of Ophthalmology and Otolaryngology, The Palmer House, Chicago, Oct. 11-16. Dr. William L. Benedict, 15 Second St., S. W., Rochester, Minn., Executive Secretary.

American Academy of Pediatrics, The Palmer House, Chicago, Oct. 5-8. Dr. E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill., Executive Secretary.

American Association of Medical Assistants, Benjamin Franklin Hotel, Philadelphia, Oct. 16-18. Mrs. Stella Thurnau, 510 N. Dearborn, Room 924, Chicago 10, Executive Secretary.

American Association of Medical Record Librarians, Radisson Hotel, Minneapolis, Oct. 12-15. Miss Margaret G. Scully, 510 N. Dearborn St., Chicago 10, Director.

American College of Cardiology, Benjamin Franklin Hotel, Philadelphia, Oct. 23-25. Dr. Philip Reichert, Empire State Bldg., New York 1, Executive Director.

American College of Chest Physicians, 25th Anniversary Homecoming Meeting, Albuquerque, N. M., Oct. 14-17. Mr. Murray Kornfeld, 112 E. Chestnut St., Chicago 11, Executive Director.

American College of Preventive Medicine, Hotel Ambassador, Atlantic City, N. J., Oct. 21-22. Dr. John J. Wright, P. O. Box 1267, Chapel Hill, N. C., Secretary-Treasurer.

American Heart Association, Trade and Convention Center, Philadelphia, Oct. 23-27. Mr. William F. McGlone, 44 E. 23rd St., New York 10, Secretary.

American Medical Writers' Association, Chase Hotel, St. Louis, Oct. 2-3. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

American Otorhinologic Society for Plastic Surgery, Inc., Conrad Hilton Hotel, Chicago, Oct. 11. Dr. Joseph G. Gilbert, 75 Barberry Lane, Roslyn Heights, N. Y., Secretary.

American Psychiatric Association, Detroit Divisional Meeting, Hotel Statler, Detroit, Oct. 29-31. Dr. Benjamin Jeffries, 16321 Mack Ave., Detroit 24, Co-Chairman, Planning Committee.

American Public Health Association, Convention Hall, Atlantic City, N. J., Oct. 19-23. Dr. Berwyn F. Mattison, 1790 Broadway, New York 19, N. Y., Executive Director.

American School Health Association, Claridge Hotel, Atlantic City, N. J., Oct. 18-23. Dr. A. O. DeWeese, 515 E. Main St., Kent, Ohio, Executive Secretary.

American Society of Anesthesiologists, Inc., Americana Hotel, Bal Harbour, Fla., Oct. 5-9. Mr. John W. Andes, 188 W. Randolph St., Room 1101, Chicago 1, Executive Secretary.

American Society of Facial Plastic Surgery, Chicago, Oct. 15-17. Dr. Samuel M. Bloom, 123 E. 83rd St., New York 28, Secretary.

American Society of Plastic and Reconstructive Surgery, Hotel Fontainebleau, Miami Beach, Fla., Oct. 18-23. Dr. Thomas Ray Broadbent, 508 E. South Temple, Salt Lake City, General Secretary.

American Society of Tropical Medicine and Hygiene, Claypool Hotel, Indianapolis, Oct. 28-31. Dr. Rolla B. Hill, 3575 St. Gaudens Road, Miami 33, Fla., Executive Secretary.

Arizona Academy of General Practice, Hotel Valley Ho, Scottsdale, Oct. 15-17. Dr. Arthur V. Dudley Jr., 1524 N. Norton, Tucson, Ariz., Convention Chairman.

Association of Clinical Scientists, Sheraton-Park Hotel, Washington, D. C., Oct. 10. Dr. Robert P. MacFate, 323 Northwood Rd., Riverside, Ill., Secretary-Treasurer.

Association of Life Insurance Medical Directors of America, Hotel Statler Hilton, New York City, Oct. 21-23. Dr. Royal S. Schaaf, Prudential Insurance Co., P. O. Box 594, Newark 1, N. J., Secretary.

Association of Medical Illustrators, Seattle, Oct. 5-7. Miss Rose M. Reynolds, University of Nebraska College of Medicine, 42nd Dewey Ave., Omaha 5, Corresponding Secretary.

Central Neuropsychiatric Association, Hotel Roosevelt, New Orleans, Oct. 16-17. Dr. Ralph M. Patterson, Columbus Psychiatric Institute, 473 W. 12th Ave., Columbus 10, Ohio.

Clinical Orthopaedic Society, Memphis, Oct. Dr. Charles H. Frantz, 1810 Wealthy St., S.E., Grand Rapids 6, Mich., Secretary-Treasurer.

Congress of Neurological Surgeons, Americana Hotel, Miami, Fla., Oct. 28-31. Dr. Richard L. DeSaussure, Suite 101 B, 20 S. Dudley St., Memphis, Tenn., Secretary-Treasurer.

Delaware, Medical Society of, Oct. 14-15. Mr. Lawrence J. Morris Jr., 621 Delaware Ave., Wilmington 1, Del.

Indiana State Medical Association, Murat Temple, Indianapolis, Oct. 6-9. Mr. James A. Waggener, 1021 Hume Mansur Bldg., Indianapolis 4, Executive Secretary.

National Rehabilitation Association, Statler-Hilton Hotel, Boston, Oct. 26-28. Mr. Edward D. Callahan, 14 Court Square, Boston 8, Conference Chairman.

National Safety Congress and Exposition, Chicago, Oct. 19-23. Fo information write: National Safety Council 425 N. Michigan, Chicago 11.

New England Society of Allergy, Longwood Towers, Boston, Oct. 28. For information, write NESA, 300 Longwood Ave., Boston.

New Hampshire Medical Society, Equinox House, Manchester, Vt. Oct. 1-4. Mr. Hamilton S. Putnam, 18 School St., Concord, N.H. Executive Secretary.

Osler Society of St. Louis City Hospital, Bellevue-Stratford and Jefferson Medical College, Philadelphia, Oct. 26-27. Dr. Jack Barrow 110 S. Central, St. Louis 5, Secretary-Treasurer.

Pacific Coast Obstetrical & Gynecological Society, St. Francis Hotel San Francisco, Oct. 21-24. Dr. Donald W. de Carle, 2000 Van Nes Ave., San Francisco, Chairman.

Pacific Northwest Society of Pathologists (Fall Meeting), Gearhar Ore., Oct. 15-17. Dr. Nelson R. Niles, U. of Oregon Med. School Portland 1, Ore., Secretary.

Pennsylvania, Medical Society of the State of, Penn-Sheraton Hote Pittsburgh, Oct. 18-23. Mr. Lester H. Perry, 230 State St., Harrisbur Pa., Executive Director.

Society of Pelvic Surgeons, Medical College of Virginia, Richmon Va., Oct. 22-24. Dr. Laman A. Gray, 408 Heyburn Bldg., Louisvill 2, Ky., Secretary.

Southern Psychiatric Association, Sheraton-Dallas Hotel, Dallas, Texa Oct. 4-6. Dr. Richard C. Proctor, Dept. of Psychiatry, Bowman Gra School of Medicine, Winston-Salem, N. C., Secretary-Treasurer.

Tri-State Medical Assembly, Confederate Memorial Medical Cente Shreveport, La., Oct. 2-3. Dr. J. W. Wilson Jr., 940 Margaret Plac Shreveport, La., Secretary-Treasurer.

Vermont State Medical Society, Equinox House, Manchester, Oct. 1- Mr. Getty Page, 128 Merchants Row, Rutland, Vt., Executive Secretar

Virginia, Medical Society of, Equinox House, Roanoke, Oct. 4-5. M Robert I. Howard, 4205 Dover Rd., Richmond 21, Va.

Western Industrial Medical Association, Inc., Statler Hotel, L Angeles, Oct. 2-3. Dr. A. C. Remington; 9851 Sepulveda Blvd., L Angeles 45, Secretary.

Western Orthopedic Association, Brown Palace Hotel, Denver, O 18-22. Vi Mathiesen, 354 21st St., Oakland 12, Calif., Executi Secretary.

November

Academy of Medicine of Cleveland Seminar on Recent Advances Diagnosis and Therapy of Malignant Disease, Cleveland, Nov. 1 19. Dr. H. S. Van Ordstrand, 2009 Adelbert Rd., Cleveland 6, Chairma

American Academy for Cerebral Palsy, Statler Hilton Hotel, L Angeles, Nov. 30-Dec. 2. Dr. Glidden L. Brooks, Brown Universi Providence 12, R. I., Secretary.

American Association of Blood Banks, Edgewater Beach Hotel, Cl cago, Nov. 4-7. Dr. John B. Alsever, Southwest Blood Banks, 1211 Washington St., Phoenix, Ariz., Secretary.

American Clinical and Climatological Association, The Homestea Hot Springs, Va., Nov. 2-4. Dr. F. Tremaint Billings, 420 Medical A Bldg., Nashville, Tenn., Secretary.

American College of Chest Physicians, Dallas, Texas, Nov. 29-3 Mr. Murray Kornfeld, 112 E. Chestnut St., Chicago 11, Executi Secretary.

American Fracture Association, Roosevelt Hotel, New Orleans, No 1-5. Dr. H. W. Wellmerling, 610 Griesheim Bldg., Bloomington, Il Executive Secretary.

American Medical Women's Association, Arlington Hotel, Hot Sprin Ark., Nov. 12-15. Mrs. Lillian T. Majally, 1790 Broadway, New York 1 Executive Secretary.

Association of American Medical Colleges, Edgewater Beach Hot Chicago, Nov. 2-4. Dr. Ward Darley, 2530 Ridge Ave., Evanston, Il Executive Director.

Association of Military Surgeons of the United States, Mayflow Hotel, Washington, D. C., Nov. 8-11. Lt. Col. George M. Beam, AU Ret., Suite 718, New Medical Bldg., 1726 Eye St., N. W., Washington D. C., Executive Secretary.

Central Society for Clinical Research, Drake Hotel, Chicago, No 6-7. Dr. Austin S. Weisberger, 2065 Adelbert Rd., Cleveland 6, Secretar

Chicago Heart Association, Symposium on Cerebral Vascul Diseases, Knickerbocker Hotel, Chicago, Nov. 7. Dr. C. Bruce Tayl c/o Chicago Heart Assn., 22 W. Madison, Chicago 2, Chairman.

Conference on Electrical Techniques in Medicine and Biolog Sheraton Hotel, Philadelphia, Nov. 10-12. Dr. Herman P. Schwan, Moo School of Electrical Engineering, University of Pennsylvania, Philade phia, Chairman.

District of Columbia, Medical Society of, Statler-Hilton Hotel, Wasl ington, D. C., Nov. Mr. Theodore Wiprud, 1718 M Street, N. W Washington 6, D. C.

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ROLE OF HEREDITY, DIET, AND EMOTIONAL STRESS IN CORONARY HEART DISEASE

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A period of prolonged emotional strain associated with occupational responsibilities preceded the attack in 91 of 100 patients with coronary heart disease. In a comparable series of 100 patients with other diseases, only 20 had undergone this kind of strain. The pattern of insecurity, frustration, and restlessness extended beyond the primary vocation into secondary occupations and leisure activities. Taking 91/20 or 4.6 as a ratio measuring the importance of occupational stress, the author obtains comparable ratios of 2.7 for diet, 2.0 for tobacco, 1.7 for heredity, 1.3 for obesity, and 1.0 for lack of physical exercise as suggesting the relative importance of these factors in causing coronary heart disease in this group of patients.

THE frequency of coronary heart disease in different parts of the world has been found to be related to the mode of life rather than to the racial structure or age composition of the population.[1] Consequently, in recent years many investigators have sought to unravel the complex relationship between the incidence of clinical coronary disease and nutrition, physical exercise, overwork, emotional stress, and the use of tobacco and alcohol. Unfortunately, even in carefully designed epidemiologic studies, these factors are not easily separable. For example, the Bantu not only subsists on a completely different diet but lives under totally different cultural, social, economic, and emotional conditions than the American Negro. Similarly, dietary fat may be implicated in the differing death rates from coronary disease among Japanese living in Japan, Hawaii, and the United States, but other characteristics of the mode of life or environment, acting singly or in combination, may also be involved in these differences.

In assessing the role of physical exercise, the relationship of occupational categories to the clinical incidence of ischemic heart diseases may also be difficult to interpret. Thus, while bus drivers indulge in less physical exertion than conductors, the higher death rates from this disease reported in the former group may result from the emotional stress of driving in modern traffic, or from obesity or other causes, rather than from a lack of physical exercise. Moreover, in the determination of emotional stress on the job, occupational titles can be misleading, since accurate evaluation must take into account not only the nature of the major form of employment but also secondary business en-

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Read before the 40th annual session of the American College of Physicians, Chicago, April 23, 1959.

deavors, deviations from usual hours of work, other activities pursued during periods away from the job, and the total life situation itself. Since it is only the evaluation of the patient which can give a measure of the stress involved, the emotional reaction to employment and to other life situations must be determined. Inasmuch as persons experiencing nervous tension may eat proportionately more calories in the form of fat, consume more tobacco and alcohol, and find less time for exercise, it is equally difficult to separate emotional stress from other possible extraneous etiological factors in the pathogenesis of atherosclerosis and coronary thrombosis.

Dietary Fat and Hypercholesteremia

Despite such inescapable problems, there is sufficient evidence from experimental and epidemiologic studies to warrant acceptance of the view that excessive ingestion of fat is causally related to clinical coronary artery disease. In animals there seems to be a parallelism between hypercholesteremia and atheromatosis. In humans, however, there are so many exceptions to such a correlation that factors other than a high blood cholesterol level must also be concerned. Certainly there is no constant relationship between the intensity and duration of hypercholesteremia and the time of onset, or severity, of atherosclerosis. It is also recognized that the relative susceptibility of the coronary arteries to atherosclerosis at any level of plasma cholesterol is modified by sex, heredity, and other factors. Similarly, the effect of diet on blood lipoprotein patterns is influenced by genetic differences in metabolism and by endocrine and nervous response to stress. Thus, it is evident that the atherogenicity of excessive ingestion of fat and of hypercholesteremia itself must be dependent on an interplay with other important factors.

Emotional Stress and Personality Factors

In recent years there has been strong denial of any scientific basis for the clinician's impression and layman's conviction that mental stress or emotional disturbances predispose one to coronary artery disease. Nevertheless, more than a decade ago various authorities independently described a constellation of personality traits in patients with coronary artery disease characterized by "compulsive striving, hard work, self-discipline and great need to get to the top." [2] In such persons they found that achievement of objectives brought no sense of satisfaction or relief from tension. Recently Wolf [3] has elaborated on this character structure and has emphasized the failure of the coronary-prone subject to enjoy "rest periods of satisfaction" between achievements. He has compared such persons with Sisyphus, a mythical king, who was forever condemned to roll a boulder up a mountain only to have it slip from his grasp within a hairsbreadth of the summit, so that his labors had to be endlessly repeated.

Occupational Stress—Emotional

If endowed with these traits, as alleged, the young candidate for coronary disease may possibly be distinguished from controls by occupational achievement or type of position held. The careful studies of Gertler and others [4] and Yater and coworkers [5] have, in fact, demonstrated a significant difference in the kind of positions held by young patients with coronary disease as compared with controls. The young patient, they found, almost always had occupied a position demanding responsibility and frequently one associated with emotional stress. Moreover, it is noteworthy that Weiss and associates,[6] as well as others, have reported that gradually mounting tension of emotional origin, months or years in duration, occurred prior to the onset of coronary occlusion in a large segment of the patients coming under investigation.

My own observations with Zohman [7] are in accord with these findings. In a group of 100 coronary patients under 40 years of age, prolonged emotional strain associated with job responsibility preceded the attack in 91% of cases, as compared with 20% for controls. In the coronary group, 25% had been holding down two jobs and an additional 46% had worked 60 hours or more per week for long periods immediately preceding the onset of symptoms. In another 20%, there was unusual fear, insecurity, discontent, frustration, restlessness, or inadequacy in relation to employment. Although positions of responsibility and jobs requiring pressure to make deadlines were significantly more frequent in the coronary group than in controls, in a great many instances stress assumed significant proportions only as a result of too many hours of work or as a consequence of secondary vocations or activities pursued during "leisure" hours.

Behavior Patterns

Friedman and Rosenman [8] recently compared three groups of men selected solely according to the behavior pattern which they routinely manifested in the performance of their work. One group exhibited compulsive striving, inclination to compete, desire for recognition, continuous involvement in deadlines, and unusual mental and physical alertness. A second group manifested a behavior pattern essentially the converse of the first. A third group was similar to the second but the behavior pattern was complicated by a chronic state of anxiety or insecurity. Friedman and Rosenman found that clinical coronary artery disease was seven times more frequent in the group manifesting an intense, sustained drive for achievement. It is noteworthy that more than 80% of the subjects in this group exhibited a behavior pattern characterized by "excessively rapid body movement, tense facial and bodily musculature, explosive conversational intonations, hand or teeth clenching, excessive unconscious gesturing and a general air of impatience."

While a significant proportion of our young coronary patients did manifest some or all of these characteristics, this description, as well as that of others, presents a caricature rather than a portrait of the average coronary patient under the age of 40 in our series. The majority did not exhibit such easily recognized outward behavior characteristics. In fact, most of the young patients under observation have shown a striking degree of self-control, dignified reserve, and outward complacency during interrogation. In most of these, psychological factors would have remained unrecognized had a special inquiry not been made regarding their presence.

In almost every instance we found the young coronary patient to be a victim of overwork, often as a result of an unrelenting drive, an intense desire for recognition, or a profound sense of obligation to his employer, his family, or others, but more commonly simply as a consequence of meeting life's challenges with maximum and unstinting effort. It was apparent that these patients had been compulsive about time, overmeticulous, and "blind" to their own stress end-point. They were often concerned about trivia, impatient with subordinates, and worrisome. As perfectionists they frequently chose to do the work themselves rather than to delegate it to others. Being "stress-blind" they took on more responsibilities at an occupational, social, or domestic level than good judgment appeared to dictate, minimized their symptoms, and neglected prudent rules of health. Perhaps the most characteristic trait of the young coronary patient, however, was his restlessness during leisure hours and his sense of guilt during periods of "relaxation." As a consequence, he rarely took vacations, and such leisure time as he did possess was frequently regimented by obligatory participation in an assortment of social, public, or educational activities.

Behavior Patterns and Occupational Demands

All types of occupations were well represented in the coronary group, and there was no indication that premature coronary artery disease is restricted to any specific level of vocational endeavor. The findings appear to indicate that emotional stress of occupational origin as well as ambitious goal-directed traits within the person may be causally related to coronary heart disease in all socioeconomic strata of our society. While emotional stress due to overwork was often a consequence of the nature and demands of the job, it was more frequently found to be a by-product of domestic obligations, multiple goals, an established behavior pattern within the person, or a combination of these. It appeared obvious, therefore, that occupational titles alone were unreliable from the standpoint of correlating epidemiologic data with any conclusive effects of occupation. Twenty-five per cent of the 100 young patients in our coronary group had been holding down two jobs prior to their illness, and, in many instances, the secondary occupation was totally different from the main type of employment. Moreover, we observed, as did others,[9] that the stress and strain of employment may be assessed differently "by the community at large and by the individual jobholder himself." Just as there are all degrees of stressful experiences, there are all gradations of resistance and of sensitivity of the person. Consequently, only careful appraisal of the individual reaction to these experiences can provide an index for quantitating stress factors.

"Contradictions" to Emotional Stress Theory

It has been claimed that racial groups in various geographical areas (Korea, Japan, Yemen) who subsist on relatively low-fat diets have appeared to exhibit a relative immunity to coronary disease despite obvious emotional stress in their patterns of life. Since this immunity seems to be lost when high-fat diets are ingested, the role of the emotions has been relegated to a position of secondary significance by some observers. On the other hand, the young coronary patients studied by me with Zohman[7] could be more readily differentiated from the control subjects by evaluation of occupational stress than by measurement of differences in fat intake, hereditary influences, obesity, tobacco consumption, physical activity, or other factors (see table).

Percentage Incidence of Various Factors in Subjects with Coronary Disease and Control Group[*]

Group	Heredity (Positive)	High-Fat Diet	Stress and Strain (Occupational)	Obesity	Tobacco[†]	Lack of Exercise
Coronary disease	67	53	91	26	70	42
Control	40	20	20	20	35	40
Ratio	1.7 to 1	2.7 to 1	4.6 to 1	1.3 to 1	2 to 1	1 to 1

[*] 100 subjects in each group.

[†] 30 cigarettes or more per day.

Thus, while there is abundant evidence that a high-fat diet predisposes population groups to coronary artery disease, it appears equally clear that, in persons so predisposed, emotional stress more than any other factor compounds this susceptibility. Yet, from epidemiologic studies, the conclusion seems inescapable that the lethalness of emotional stress is strongly mitigated, if not nullified, by subsistence on a diet low in fat. When food was rigorously rationed during the occupation of Norway and the Netherlands, for example, there was no general increase in cardiac death rates, according to available statistics, in spite of an obvious increase in emotional tensions. Similarly, the victims in concentration camps enduring indescribable hardships have not appeared to show a greater incidence of coronary disease.

While these observations indicate that emotional stress cannot be the sole factor in the etiology of coronary atherosclerosis, they do not exclude it as a major influence in the pathogenesis of this disorder in the American male and other susceptible groups subsisting on a high-fat diet. Indeed, while emotional stress appears to be well endured on a low intake of fat, most of the lethalness of a high-fat diet in our society would seem to be dependent on the "catalytic" influence of stressful living.

Stress and the Sympathetic Nervous System

At present, there is no clear understanding of the manner in which emotional stress may lead to clinical coronary artery disease, but numerous clues have been uncovered. Stress reactions are commonly associated with fluctuations of epinephrine, hypothalamic overactivity, and cortical and autonomic imbalance. In such illnesses as hypertension, colitis, asthma, and peptic ulcer, there are fairly well understood neural pathways and circuits involving the autonomic nervous system through which emotions can affect smooth muscle, glandular secretions, or both. In like manner, as a result of stress, sympathetic adrenergic effects on vascular tissue metabolism may contribute to atherogenesis to a much greater extent than is being generally appreciated.[10] Since epinephrine and arterenol (from the sympathetic nerve terminals) are potentially injurious to the vascular tissue, an excess of these hormones, by primarily damaging the intima, may prepare the soil for subsequent lipid depositions.

Moreover, it has been found experimentally that the deposition of cholesterol in the intima is accelerated and intensified by epinephrine and that catecholamine-phospholipid compounds seem to possess a particular affinity toward arterial tissues. Raab and Humphreys[11] have shown that catecholamines diminish myocardial efficiency and, by wasting oxygen in a disproportionate fashion, are capable of inducing severe, potentially necrotizing myocardial hypoxia. Selye[12] more recently has succeeded in producing massive, infarct-like necroses in the myocardium of various experimental animals, including the primate, by sensitization with certain corticoids and exposure to a variety of stressors. At present it is unknown whether a relationship exists between these lesions and the cardiac infarcts of man.

Stress and the Endocrine System

Since there is a close relationship between nervous stimuli and endocrine gland function, emotional stress acting through the cerebral cortex and hypothalamus may exert important effects on the endocrine system. Considerable evidence attests to the fact that the maintenance of normal cholesterol metabolism and of the coagulation-fibrinolysis system can be disturbed by stress-induced alteration of the physiological endocrine balance.

A number of investigators, as well as our own group, have observed striking elevations of the serum cholesterol level during transient stressful life situations. Bogdonoff and associates[13] have also shown that emotional episodes cause a rapid mobilization of nonesterified fatty acids from the body tissues into the circulation and have obtained similar results with infusions of epinephrine and arterenol. Although the mechanisms underlying such responses have not been clearly elucidated, hyperlipemia so evoked is believed to "provide metabolic substrate for the aroused organism."

In this regard, Seifter[14] and associates have shown that various forms of stress stimulate the anterior pituitary to discharge ACTH, the latter stimulating the adrenal cortex to discharge glucocorticoids; the corticoids then stimulate the posterior pituitary to release a lipid-mobilizer substance which acts on the fat depots to release neutral fats into the portal circulation. If the liver is not capable of handling this fat load, neutral fat is discharged into the peripheral circulation in association with cholesterol, resulting in a generalized hyperlipemia. It appears possible, therefore, that the mobilization of lipid from the fat depots by this mechanism may be an important cause of hypercholesteremia and coronary atherosclerosis in many of the patients seen in clinical practice.

The blood-clotting elements have also been found to be susceptible to emotional stresses. Shortening of the clotting time and an increase in viscosity of the blood appear to be part of an adaptive response to combat in order to prevent blood loss. When this mechanism reacts excessively over a prolonged period of time, blood with increased coagulability and decreased fluidity may slow sufficiently in passing through narrowed coronary or cerebral arteries to produce thrombosis.

Stress and Clinical Coronary Artery Disease

From these findings it would seem that prolonged emotional stress acting through the cerebral cortex and hypothalamus via neurohormonal and hormonal mechanisms may contribute not only to the initiation and progression of atheromatosis but also to its sequelae. Thus, metabolic changes in the vascular wall leading to an increase in its lipid receptiveness, elevation in blood cholesterol level, augmentation of myocardial oxygen requirements, and increase in the coagulability and viscosity of the blood appear to be implicated both in the adaption to stress and in the pathogenesis of clinical coronary artery disease. Wolff[15] has stated that "man, feeling threatened, may use for long term purposes devices designed for short term needs. They are not designed to be used as life long patterns and when so utilized may damage structures they were designed to protect." In many instances, therefore, atherosclerosis and coronary heart disease may represent a maladaptation syndrome in which the organism already oversupplied with circulating fat molecules (metabolic defect, dietary indiscretion, or both) useful in "combat" remains in a chronic state of mobilization for "fight or flight" as a result of stressful life situations. While mechanisms so evoked appear innocuous in "immune" groups subsisting on a low-fat diet, these adaptive devices greatly augment the atherogenicity and lethalness of excessive ingestion of fat and hypercholesteremia.

Failure to recognize the profound effect of socioeconomic stress on bodily function and human behavior in epidemiologic studies has greatly exaggerated the role of dietary fat per se in the etiology of clinical coronary heart disease. Although excessive ingestion of fat may impair lipid metabolism, prolonged emotional stress appears not only to augment profoundly this derangement but also to increase the receptivity of the vascular walls to cholesterol and to hasten the clotting of blood. The high intake of fat and the stressful patterns of living commonly observed in populations which are economically privileged must therefore be recognized as a highly lethal combination.

From all the evidence, it would appear that there are three major predisposing factors in the initiation and progression of coronary atheromatosis in young adults; namely, heredity, a high-fat diet, and emotional strain. Without exception, one or more of these factors was present in every patient in our coronary group, whereas none of these influences was observed in 24% of the control subjects. At least two of the major factors were evident in 95% of the coronary patients, as compared with only 12% of the control subjects. Emotional stress, usually associated with job responsibility, however, appeared to be far more significant in the etiological picture of coronary disease in young adults than heredity, the quantity of fat ingested, or other factors under consideration (see table).

Tobacco Consumption

A strong and consistent relationship has been found between cigarette smoking and coronary heart disease mortality. Our own studies have shown that smoking was not only more prevalent in the coronary group but also that twice as many of the coronary patients as compared with controls were heavily addicted to the use of tobacco. It would seem, therefore, that tobacco smoking is either an etiological factor in coronary heart disease or merely a manifestation of the inner tensions which beset the coronary-prone subject. I have found a close correlation between the quantity of tobacco smoked and the changing pressures of the life situation in the individual case. Moreover, among persons exhibiting a behavior pattern found to be associated with a high incidence of coronary atherosclerosis, Friedman and Rosenman[8] observed no "pathogenic relevance" between cigarette smoking and clinical coronary disease, despite the fact that smoking was more prevalent in this susceptible group than in controls. The greater consumption of tobacco by the candidate for coronary atherosclerosis, therefore, attests further to the significance of emotional factors in the pathogenesis of this disease.

Obesity and Physical Exercise

No support could be found for the view that obesity is an important etiological factor in the development of coronary heart disease in young adults. Manifest obesity was not significantly more prevalent in the coronary subjects than in controls (see table). Similarly, no correlation of regular exercise or the lack of it with normal health or early coronary disease was shown in our study. Moreover, few of the coronary patients could be considered to have possessed the "loafer's heart," as defined by Raab.[10] Consequently, these findings are inconsistent with a prevailing view that physical exercise reduces the tendency to develop arteriosclerosis. Nevertheless, the value of exercise, within physiological limits, in diminishing nervous tension must not be minimized.

Pressures of Leisure

Although ours is a civilization that enjoys more leisure than any in history, the majority of us in reality work harder—at something—than we have ever done before.[16] Not infrequently occupational demands are minimal compared to the pressures of our society. Much of the envied leisure time of Americans is regimented by participation in a variety of social, educational, and civic activities. Such obligatory use of leisure is not satisfying and may represent a poor antidote for the emotional stresses of daily business competition.

Clinical Implications

It is well recognized that emotional tension may result in compulsive eating, drinking, and smoking in many persons as compensation for anxiety. Moreover, it does frequently contribute to the failure to achieve daily exercise "by promoting fatigue and by forcing a man to make so many commitments that no time is found for exercise, such as walking."[16A]

Dawber[17] and his associates at the Framingham project have observed that an increased predisposition to coronary artery disease exists in persons manifesting hypertension, obesity, or hypercholesteremia. On the other hand, nervous strain of occupational, cultural, social, or domestic origin is known to elevate blood pressure, to increase the tendency to obesity, and to contribute to hypercholesteremia by psychic influences and by alteration of the functional characteristics of the mode of life. Consequently, even such indirect effects of emotional stress, barring all others, must elevate this factor to a position of significance in the etiological picture of coronary heart disease.

Some authorities have warned of the danger of assuming that emotional stress is an important agent in the etiology of coronary disease. They fear lest this view, by creating the belief that mental stress is always bad, may strip human life of its higher values and incentives and lead to unimaginative boredom. The presumption that the only alternative to a stressful existence whereby one lives a dynamic, purposeful, and happy life is retreat to a stress-less existence in which one vegetates is erroneous. Certainly Sir Thomas Lewis'[18] description of a prudent way of life, if followed, would not impair emotional and spiritual creativeness or the enjoyment of a full life:

> Very prudent people live quietly and moderately; they have their simple daily routine of work and pastime, enlivened by occasional excursions and entertainments, social gatherings and visits to and from their friends. They are temperate in their eating, taking no more than will maintain them in robust health, arranging their diet to consist chiefly of plain good food, relieved occasionally of its monotony by a more elaborate, but not heavy meal. They are regular in their habits of work and exercise, and in their mealtimes. They are strictly temperate in their drinking. They control their emotions and their passions. They avoid all forms of excess. They use tobacco little if at all. They welcome the freshness of abundant air and open spaces, delighting in the feelings of invigoration that accompany active exercise; they love the warmth of sunlight playing on their skins and the sleepiness of healthy fatigue. These are habits that few people in industrial countries now adopt, that fewer still maintain. The cares and distractions of an increasingly complex life, indoor or sedentary occupation, advancing years and decreasing energy interfere less or more, and the prudent rules are neglected; neglect is the easier because the penalties, owing to the body's great power of resistance to disease, are uncertain in their incidence and often long deferred.

Healthy habits would become more prevalent if the consequences of their neglect were more immediate and variable. Since diet and mode of life appear all-important in the prevention and control of coronary heart disease, and since one cannot reasonably anticipate adoption of the Bantu's dietary regimen, efforts at reduction of stress in the American way of life should prove most rewarding. Indeed, healthy habits, an optimistic philosophy, and the sound use of the abundant leisure which has made us the envy of the world might well neutralize or retard the atherogenic mechanisms which appear to be accelerated by the "stress and strain" of our daily struggle for existence.

176 Hart Blvd.

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CURRENT CONCEPTS OF THE MANAGEMENT OF OTITIC INFECTIONS

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Although the incidence of mastoid infections has diminished greatly during the past two decades, in our experience the incidence of complications has increased considerably. Recognition of these complications has become more difficult since the advent of antibiotics because of their insidiousness and accompanying obscure clinical pictures. These drugs often provide a false sense of security while life-threatening situations are developing. Antibiotics and chemotherapy must be used judiciously in otitic infections with the view not to mask complications which are impending or have occurred. The need for accurate diagnosis, bacteriological examination, myringotomy when indicated, and rational therapy in general has not been obviated by the use of antibiotics in the management of patients with otitis or mastoiditis.

The great decrease in the number of mastoid infections during the past two decades has not lessened concurrently the serious problems associated with these infections. Actually, not only has the incidence of major complications increased proportionately but their recognition has become more difficult. This is the result of the promiscuous and widespread use of antibiotics and chemotherapy by general practitioners, internists, and pediatricians and also by otolaryngologists. Phases of this subject have been discussed by Tamari and Henner,[1] Henner,[2] Courville,[3] Nielsen,[4] Silcox,[5] Rosenwasser and Adelman,[6] Morrow,[7] and many others; yet this problem seems to show no sign of improvement. Because of some of our recent experiences, we believe that it is important to restate at this time these principles in the management of otitic infections.

What are the complications that can be obscured by antibiotics and sulfonamides? Perisinus, epidural, and brain abscess, bacterial meningitis, primary jugular bulb and lateral sinus thrombosis, and labyrinthitis compose the frightening list of diseases which can, but should not, evade recognition. In our experience otitic complications now occur in about 40 to 50% of mastoid infections as compared to 5 to 10% prior to the era of antibiotics and chemotherapeutics.

One of the most troublesome consequences of the indiscriminate and injudicious use of antibiotic and chemotherapeutic agents has been the development of variable micro-organisms as etiological agents and of resistant strains of these micro-organisms. At one time 90% of mastoid infections in our institution were caused by the beta hemolytic streptococcus, which is usually sensitive to penicillin. We must now contend with many infections in which Staphylococcus aureus and gram-negative micro-organisms, such as the Hemophilus influenzae, Proteus vulgaris, and Pseudomonas aeruginosa, are the infecting agents. Many of the Staph. aureus micro-organisms have become resistant to most antibacterial drugs. Therefore, it must be realized that in otitic infections it has become essential first to determine the infecting micro-organism and the sensitivity of this micro-organism rather than to rely on the administration of penicillin and more penicillin. Also, it must be appreciated that antibiotics and chemotherapy are not foolproof. Mastoiditis is a bone disease which can smolder and spread while symptoms abate.

As a consequence of this absence of alarming symptoms and findings, patients are observed for prolonged periods. No longer can one rely on the septic febrile course, chills, and proved bacteremia in patients with sinus thrombosis or on hemicranial pain, profuse aural discharge, and persistent and exquisite tenderness in patients with perisinus, epidural, or brain abscess. Complications, such as meningitis, labyrinthitis, and facial paralysis, appear without the usual warning symptoms of progressive mastoid disease.

Advanced Mastoid Disease

It has been our experience that advanced mastoid disease can exist without the symptoms and signs which two decades ago were considered necessary in order to make the diagnosis of suppurative mastoiditis. We have repeatedly seen disease of the mastoid bone requiring surgery in patients having an intact, flat tympanic membrane with landmarks visible and with no fever or mastoid tenderness. In addition, roentgenograms of patients who have received antibiotics for long periods of time for otitic infections may offer misleading information. Serious infection may be present in the

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mastoid bone under these circumstances, without the usual evidence of destruction. Roentgenograms in these instances may show cloudiness without evidence of bony destruction; yet extensive infection may exist in the mastoid bone. Operative intervention in such cases often discloses multiple areas of infection with softening but no dissolution of the bony septums. The following two cases are presented to illustrate this point.

CASE 1.—A 5-year-old boy was admitted to the hospital with a seven-week history of fever after an acute upper respiratory infection, during which time he was treated with penicillin and other antibiotics. On admission of the patient the tympanic membrane was flat and all landmarks were present. There was a small area of tenderness far back on the mastoid bone over the region of the emissary vein. Roentgenograms of the mastoid region were reported as showing "cloudiness of the mastoid but no evidence of destruction."

Operation revealed extensive bone destruction and creamy pus oozing from granulations over an exposed lateral sinus and middle fossa dura. Streptococcus hemolyticus was isolated from the pus. This patient had a badly diseased mastoid with perisinus and epidural abscesses, even though the tympanic membrane was normal and the roentgenograms exhibited minimal findings. Penicillin had been administered for seven weeks.

CASE 2.—A 7-year-old boy became ill seven weeks prior to admission to the hospital, with pain in the right ear which disappeared after three days of administration of penicillin. Two weeks later pain returned in the right ear, and the temperature rose to 107 F (41.7 C). The patient was again treated with penicillin for several days. He was well until four days before admission, when there was a recurrence of earache, this time associated with vomiting and temperature of 103.6 F (40 C). Penicillin therapy was resumed. Diplopia appeared on the day preceding admission.

The positive findings on admission were a dull, intact right tympanic membrane with all landmarks present except the light reflex; tenderness over the right mastoid bone; and a paresis of the right sixth cranial nerve. A roentgenogram showed "diffuse haziness overlaying the entire right mastoid region, obliterating the intercellular septums, and obscuring the pneumatic structures; there was no definite evidence of bone destruction." Cerebrospinal fluid was normal. While the patient was in the hospital, right hemicranial headache increased as well as general malaise. A mastoidectomy was performed two days after admission. All the cell walls appeared soft and necrotic. In the region of the tip there was extensive necrosis of the cells with necrotic granulations. The lateral sinus plate was necrotic. There was an extensive perisinus abscess with an organized blood clot between the sinus plate and sinus wall.

After operation there was rapid disappearance of the signs of meningeal irritation. The paralysis of the right external rectus muscle cleared in two days. Culture of material taken from the mastoid cavity failed to yield any micro-organisms. This child had meningeal irritation secondary to mastoiditis with perisinus abscess which became evident after six weeks of intermittent and inadequate antibiotic therapy. The middle ear appeared innocuous and had never discharged.

Comment.—How can one be on guard as to the possibility of mastoid disease and its complications in this era of antibiotics? As previously stated, the infecting micro-organism must be determined and sensitivity tests made in every instance. Should an otitic infection persist behind an intact tympanic membrane, the secretion in the middle ear should be aspirated for culture. If evidence of an otitic infection persists after antibiotics or chemotherapy have been administered for a reasonable length of time, then the use of the antibacterial drug should be discontinued and the clinical course observed without the interference of such medication. As in the years before antibiotics were used, the element of time should play an important role in determining the course of management. For instance, since Staph. aureus is a particularly destructive micro-organism in mastoid disease, it is our opinion that it is much safer to perform a mastoidectomy early in the course of the disease, when this is the infecting micro-organism.

If an otitic complication is suspected, it is also wiser to permit the disease to manifest itself in its early stages rather than in an advanced state when life itself is threatened. At some point within the first few weeks after the onset of an otitic infection, it becomes imperative to know what is actually happening within the temporal bone. In this way adequate surgical procedures can be performed before the disease has progressed to a serious degree, if antibiotic therapy and chemotherapy have failed. Experience has proved that thorough mastoidectomy performed at the proper time is far less dangerous than procrastination or neglect when disease of the mastoid bone exists. We believe that this point of view is especially pertinent in our age of antibacterial therapy. It is indeed to the patient's and doctor's advantage to treat an uncomplicated mastoiditis rather than to cope with a masked complication.

We would like to mention two unfortunate patients whose clinical pictures were completely masked by prolonged antibiotic therapy and who ultimately died. One, a young girl, entered the hospital in coma with an extensive lateral sinus thrombosis and acute meningitis; the other, a young boy, was admitted to the hospital in coma with a large brain abscess.

Chronic Otitic Infections

Special reference should be made to chronic otitic infections. Years ago the acute exacerbations usually were caused by the common pyogenic micro-organisms, such as Str. pyogenes and Diplococcus pneumoniae, or occasionally by Staph. aureus. P. vulgaris, Ps. aeruginosa, and resistant Staph. aureus are now more frequently responsible for these infections. These micro-organisms in themselves increase the incidence of the complications which are commonly associated with exacerbations of chronic infections, namely, cerebellar abscess, meningitis, acute labyrinthitis, and facial paralysis, and they do not yield to antibacterial drugs as do Str. pyogenes and D. pneumoniae. The following two cases are offered as illustrations.

Case 3.—A 64-year-old man presented the complaint of pain in the left ear and left hemicranial headache of five weeks' duration. The ear had been discharging for a short time. The ear pain and headache had progressed until it became very severe. In the fifth week, dizziness and impaired hearing and buzzing appeared in the left ear. During the entire five weeks the patient had received penicillin.

Examination revealed marked nystagmus to both left and right, tenderness over the left mastoid, and conductive deafness in the left ear, but hearing was present. The ear drum was yellowish, with a marginal posterior superior perforation, and there was no discharge. Roentgenograms of the mastoids showed "no evidence of bony breakdown or abscess formation of the body of the mastoid" and a "completely apneumatic mastoid with slight enlargement of the antrum."

An endaural radical mastoidectomy was performed. The mastoid was sclerotic. A large cholesteatoma was found that had eroded the cerebellar and middle fossa plates and had caused partial necrosis of the labyrinthine capsule of the external semicircular canal. There were also infected granulations on the cerebellar and middle fossa duras. Culture of this mastoid yielded P. vulgaris.

An acute exacerbation of symptomless chronic middle ear disease caused by P. vulgaris had been treated with penicillin for five weeks, while headaches and labyrinthine symptoms increased. The findings in the middle ear remained minimal during this entire period. With eradication of the disease process, the patient made a complete recovery.

Case 4.—A 76-year-old man had had a mastoidectomy on the right performed 50 years before. He was well until six months prior to admission to the hospital, when he developed pain in the right ear, with discharge. Pain became progressively worse, headache supervened, and his poor hearing became further impaired. The patient received a variety of antibiotics during the entire six months.

On admission of the patient, the tympanic membrane was intact and dull and presented no landmarks. The roentgenogram showed the old mastoid defect. It was found that a probe could be passed through granulations on the posterior canal wall into the mastoid. Discharge obtained from this tract yielded Ps. aeruginosa.

At operation extensive disease was found in the remaining mastoid bone. There was necrosis of the posterior canal wall with necrotic granulations over the facial nerve. On the 17th postoperative day, the patient developed facial paresis, which became total. He was treated locally with neomycin sulfate. After three weeks the paralysis began to clear and ultimately disappeared.

This is an instance of a Ps. aeruginosa infection in an acute exacerbation of a previously operated on mastoid which was treated for six months with a variety of antibiotics. At no time was a culture or, more important, a sensitivity test done. In spite of treatment with a variety of antibiotics, necrosis of the posterior canal wall and exposure of the facial canal wall developed.

Comment.—The treatment of chronic otitic infections in recent years has been greatly influenced by such new procedures as tympanoplasty, with a view to improving hearing. When dealing with otitic complications, we believe that all effort should be focused on treating the complications, with the conservation or improvement of hearing of secondary importance. Needless to say, physiological function must not be sacrificed when it can be safely maintained.

The consideration of this subject would not be complete without a brief discussion concerning the present therapy of acute otitis media. The otolaryngologist is called on to treat the acute middle ear infection very infrequently. These infections are treated mostly by our medical confreres, especially the pediatrician, and the method of therapy is invariably the administration of penicillin, sometimes with other antibiotics, no matter how definite the evidence that pus exists under pressure behind the tympanic membrane. Those of us who have had the experience of exploring middle ears for conductive deafness have been impressed with the frequency with which adhesive processes and scar tissue have been found to enmesh the ossicles. These tissue reactions are most likely the result of previous infections. It is our opinion that purulent infections of the middle ear which are not properly drained, as is usually done when there is a collection of pus anywhere, may occasionally lead to alterations in the middle ear which can result in impaired hearing.

Again, because of the present variations in etiological agents in middle ear infections and in the sensitivity of these micro-organisms to antibiotics and the sulfonamides, it seems to us that the principle of drainage of acute middle ear infections by myringotomy as additional therapy should be stressed more than ever.

Conclusions

The incidence of serious and life-threatening complications in mastoid disease has increased considerably during the era of antibiotics and sulfonamides. This is largely due to indiscriminate and injudicious use of antibiotics and chemotherapeutic agents, the change in the causative micro-organisms in mastoiditis and the development of resistance of these micro-organisms to these drugs, and the false security which these drugs provide which results in unwarranted and undesirable prolonged therapy and observation.

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HYPNOANALGESIA AND HYPNOANESTHESIA FOR CARDIAC SURGERY

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Hypnosis was used in connection with thoracotomy for heart disease in eight patients, the youngest being 10 and the oldest 58 years of age. The first six all received diphenhydramine, thiamylal, alphaprodine, either pentobarbital or secobarbital, and either succinylcholine or hexylcaine. The seventh required only thiamylal, succinylcholine, and hexylcaine. The eighth, a woman aged 42, underwent mitral commisurotomy after receiving only hexylcaine topically for endotracheal intubation and 30 mg. of succinylcholine intravenously for muscular relaxation; this patient was able to remove the tube herself, required no postoperative narcotics or sedatives, and manifested total operative amnesia. It is concluded that the reassurance which can be induced by hypnosis allays fear, anxiety, and tension more effectively than do the tranquilizing drugs.

Psychological factors play a large role in the total response of a patient to surgery. Anesthetists are often so busy with the mechanical and technical aspects of their specialty that they overlook some of the psychogenic elements which can also produce changes in the patient. Anesthetic dosage is dependent not only on the physical state of the patient but on his emotional configuration as well. As Kubie and Margolin[1] stated, "The action of drugs is never a simple function of either the chemistry of the drug or its dosage. The effects of identical doses of any drug administered to the same individual will vary, depending on the conscious and unconscious emotional processes at work in the patient."

Attitude of the Patient

Illness is something the average patient cannot cope with. He is usually beset by the fear of something unknown and, as a consequence, feels helpless and frightened. However much illness itself may be feared, an operation, and especially anesthesia, is even more dreaded and is likely to cause greater tension, anxiety, and apprehension. Anesthesiologists are well aware of cardiac and respiratory decompensation and have concentrated their training and practice on its prevention. Little attention, however, has been paid to the problem of psychological decompensation and its prevention.

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Hospitalization produces sudden and drastic changes in the pattern of the patient's life. It is a strange environment where one is exposed to all the stresses which accompany the lack of privacy. This feeling of helplessness and abandonment fosters even greater anxiety and apprehension. Operations in early childhood may produce, as traumatic effects of these procedures, later phobic symptoms and feelings of having been drugged, gassed, or suffocated.[2] Sleeplessness, restlessness, and agitation are among the disturbances in emotional adjustment which have been described after surgery and anesthesia.[3]

Patients with Heart Disease.—Patients with heart disease who have to undergo cardiac surgery present a particular problem and challenge. The word "heart," as Wolff[4] expressed it, has become a symbol for the human spirit. Stress-producing life situations, in association with feelings of anxiety and fear, produce changes in cardiovascular and respiratory function. Under stress, the heart does not function normally. It functions inefficiently as to rate, rhythm, and coronary flow and takes a far longer time to return to the normal state. In fact, this is more operative under emotional stress than during physical exercise.[5]

Anything interpreted as a threat to life can produce bodily changes sufficient to destroy the organism. As has been pointed out by Wolf[6] the occurrence of various arrhythmias in association with emotional distress is quite familiar. However, what is not readily recognized is that atrial fibrillation and ventricular tachycardia may be induced by circumstances that have a stressful meaning to the patient. What can be expected in patients with already damaged hearts or compromised circulations? These patients have made a long-term adaptation to the progressive limitation of their activities, in order to provide for their emergency defenses.

Patients are incapacitated to varying degrees by heart disease. The way persons adjust to this disease depends on their total personality organizations and their life situations. On developing heart disease many patients have to alter their patterns of life. They are advised by their physicians to change their mode of living, including work habits as well as interpersonal relationships between members of the family. Since early childhood many of these patients have regarded this disability as a distinct threat to their existence. Most patients feel that, since they have been told all their lives to "take it easy," not to strain their hearts, and to be careful about everything they do, they cannot tolerate an operation on the heart. Isn't it dangerous? How can they survive?

These patients are especially fearful of being placed in this helpless situation while under the influence of anesthesia. They are concerned about the forthcoming operation and its outcome. They are also aware of the anxieties of their close relatives, although these may never have been verbalized. Many even feel the anxieties of the physicians who recommend the surgery. To get a patient to consent to the operative procedure many doctors must confront him with the seriousness of his disease for the first time. This further breaks down the patient's thin defenses and arouses even greater anxiety.

While it is true that the reaction to the disease is not the same in all persons and depends on personality structure and the degree of physical incapacity and the duration and severity of the illness, heart disease has a variety of complex effects and meanings to the patient. Cardiac disease is usually a serious ailment and often a chronic one. Its impact is great and it is accompanied by considerable psychological effects. The heavy emotional load a patient carries was clearly expressed by a well-known personality who said he was consumed with a "cold, clammy, clutching fear" prior to a thoracic operation.

Techniques of Anesthesia

Anesthesia for patients undergoing cardiac surgery requires the use of the least toxic medication and the lightest plane of anesthesia. In general, all that is needed for anesthesia in cardiac surgery is a combination of analgesia, amnesia, and muscular relaxation to provide the surgeon with a quiet field to work in.[7] Artusio,[8] in 1955, reported on ether analgesia for mitral valvulotomy and predicted that the analgesic state would be the narcosis of the future. Artusio obtained his results by allowing the patient to ascend from deep to light planes of anesthesia. Bailey and co-workers[9] also described a technique of anesthesia for cardiac surgery, which involved keeping the patient in a relatively light plane of anesthesia with barbiturates, narcotics, and muscle relaxants and administering 100% oxygen during most of the procedure. Sheiner[10] has described a light zone of anesthesia through which the patient is guided by suggestions. He stated that it was not possible to reach the light zones of anesthesia directly but that it was always necessary to deepen anesthesia to stage 3, plane 1, and then allow the patient to drift to the desired light state.

Hypnosis.—It is well known that deep anesthesia may significantly impair myocardial function.[11] The heart itself is relatively insensitive to pain from surgical intervention, and little analgesia is required for operations on the heart. The use of hypnosis offers a means of inducing a light plane of anesthesia in the cardiac patient without first exposing him to the hazards of deep anesthesia. Hypnosis is indicated in these patients, because it is a method which is extremely effective in overcoming the fear, anxiety, and apprehension which accompany the anticipated surgery and anesthesia. It is valuable as a means of sedation and can in many instances reduce the premedication and often completely eliminate it. It will aid in increasing patient cooperation and assist in postanesthetic recovery. The use of posthypnotic suggestion will contribute to a more pleasant, comfortable, and rapid postoperative recovery. Properly used, posthypnotic suggestion can be effective in producing operative amnesia and improving postoperative morale and motivation toward getting well.

Hypnosis can raise the pain threshold and reduce the postoperative need for depressant narcotics. The emotional state influences the thresholds of pain perception and reaction to pain. Pain perception is dependent on the integrity of relatively simple and primitive neural fibers. Reaction to pain, however, is related to the highest cognitive functions and depends on the suprasegmental integrative cortical levels. Pain and anxiety are reciprocally interrelated. Anxiety provides the soil in which pain can take root.[12] The threshold of pain perception can be raised by 40 to 50% through hypnosis.

The employment of hypnotic techniques, in combination with minimal amounts of chemical anesthetic agents (hypnoanalgesia), will reduce toxicity and lessen the dangers of cardiovascular and cardiorespiratory depression. It will enable the cardiac patient to undergo the rigors of surgery and anesthesia with less risk and greater safety. In rare instances, hypnosis alone is effective (hypnoanesthesia); this offers the greatest benefit and advantage to the patient.

Last year I [13] described the use of hypnoanalgesia for open-heart surgery in two children. I am reporting here further experiences with the use of hypnoanalgesia and hypnoanesthesia in cardiac surgery. The operative procedures include the closure of interatrial septal defects in three children and mitral commissurotomy in four adults, performed under hypnoanalgesia. Also, the first mitral commissurotomy performed entirely under hypnosis (hypnoanesthesia) is being reported.

The opportunity for the use of hypnosis is enhanced in persons undergoing cardiac surgery, because these patients are usually admitted to the hospital several days prior to the scheduled operation. This makes them available for interview by the anesthesiologist and presents him with the time necessary for the successful use of hypnotic techniques. The technique used should be one which is most suitable for the patient and one which seems most natural to the doctor and with which he feels most comfortable. I have found the most satisfactory technique in these patients to be a method of progressive relaxation. Relaxation will lower the state of tension and relieve the oppressive effects of the emotions on the bodily functions. Many of these patients can be hypnotized to some degree, but total and complete anesthesia requires a person capable of reaching a somnambulistic level of hypnosis.

During surgery an intravenous infusion is started in every patient to allow for the administration of fluids, blood, or any drug, should it be needed to maintain a smooth, safe course of anesthesia. No unnecessary risk is ever taken with any patient. Oxygen is always administered. No patient is exposed to possible noxious reflex action; for example, on laryngoscopy, the vocal cords and trachea are sprayed with topical anesthesia to prevent possible laryngeal spasm or vagal arrest during intubation. An airway is always inserted to allow for deeper and more adequate respiration. Endotracheal intubation may not always be as easy in a hypnotized as it would be in a totally curarized patient. Patients may often move. However, this does not interfere with the procedure. Furthermore, the patient has no memory of this. After intubation 100% oxygen only is administered. The patients tolerate the endotracheal tube without any difficulty.

From time to time small amounts of 0.2% succinylcholine solution may be added to the intravenous infusion, in order to facilitate the surgery by providing a quieter operative field. Under hypnoanalgesia minimal amounts of chemical anesthetic agents are needed, and under hypnoanesthesia no anesthetic agents are needed. When the operation is completed the patients are awakened gradually by dehypnotization after appropriate posthypnotic suggestions have been given, regarding postoperative comfort and relaxation and the ability to breathe deeply and to cough easily when requested to do so. Response to posthypnotic suggestions has been very satisfactory.

Report of Cases

Child Patients.—Children, because of their ability to project an image and create a fantasy, make unusually good hypnotic subjects.[14] The following cases involved three children, aged 10, 11, and 15, who were operated on for closure of an interatrial septal defect, under hypnoanalgesia.

CASE 1.—A 10-year-old girl was admitted to the hospital for surgical repair of an interatrial septal defect. She was seen two days prior to operation and was able to enter a partial hypnotic trance by means of an image-projection technique. The morning of surgery she was given as premedication pentobarbital sodium, 50 mg., and diphenhydramine (Benadryl) hydrochloride elixir, 1 dr. (4.5 cc.), at 6:30 a. m. She was brought to the operating room at 7:45 a. m. in a calm, relaxed state. At 8 a. m., after being placed on the operating table, she was rehypnotized in response to a given signal. A catheter was securely placed into the right antecubital vein and 75 mg. of thiamylal (Surital) sodium injected intravenously. Prior to intubation alphaprodine, 10 mg., and succinylcholine, 10 mg., were also injected intravenously. Endotracheal intubation was performed without difficulty and 100% oxygen administered throughout the procedure.

Prior to incision, at 8:30 a. m., 25 mg. of thiamylal was again injected. After a right-sided thoracotomy was performed, the child was put on cardiac bypass (pump oxygenator) at 11:37 a. m. The heart was opened at 11:39 a. m., and the interatrial defect was closed with silk sutures within four minutes. During the cardiotomy the child opened and closed her eyes on command. She was taken off the pump oxygenator at 12 noon and the operation was completed at 2 p. m. At the end of the procedure suitable posthypnotic suggestions were given and extubation was performed. The child was then awakened and was happy to know that the procedure was completed. She made an uneventful recovery and required minimal amounts of narcotic drugs postoperatively.

CASE 2.—An 11-year-old boy weighing 98 lb. (44.5 kg.) was admitted for surgical repair of an interatrial septal defect. He was seen two days before surgery and responded well to hypnotic suggestion. The morning of surgery he was given secobarbital, 50 mg., and diphenhydramine, 25 mg., as premedication. One hour later he was taken to the operating room and at 7:30 a. m. was rehypnotized by response to a prearranged signal. A catheter was securely placed in the right antecubital vein and 100 mg. of thiamylal sodium injected intravenously. Endotracheal intubation was performed without difficulty after the intravenous injection of succinylcholine, 20 mg., and alphaprodine, 10 mg., and 100% oxygen was administered throughout the procedure. After the necessary intravenous and arterial cut-downs were done, the operation began at 9:35 a. m.

Just prior to the incision an additional 10 mg. of alphaprodine was given intravenously. Right-sided thoracotomy was performed, and the boy was put on the pump oxygenator. The auricle was opened at 11:41 a. m. and closed at 12:12 p. m., during which time a large interatrial septal defect was satisfactorily closed. The operation was completed at 1:45 p. m. Appropriate posthypnotic suggestions were given and then the boy was asked to awaken. He was then asked to remove the endotracheal tube by himself. This he did with ease. He made an uneventful recovery.

CASE 3.—A 15-year-old girl weighing 115 lb. (52.2 kg.) was admitted to the hospital for surgical closure of an interatrial septal defect. She was interviewed the day prior to surgery and responded well to suggestions of relaxation but not to suggestions of anesthesia. An attempt was made to condition her to acceptance of cold, since the operation was to be performed under hypothermic anesthesia. Her response was difficult to interpret, but I nevertheless felt encouraged to go ahead. The morning of surgery she received as premedication secobarbital, 100 mg., and diphenhydramine, 25 mg. She was brought to the operating room awake but relaxed. At 10 a. m., with use of a hypnotic induction technique, a catheter was placed in her left antecubital vein and an intravenous infusion of 5% dextrose in water begun. Thiamylal sodium, 100 mg., was injected and again suggestions of well-being while cold were given. Endotracheal intubation was performed after the intravenous injection of 20 mg. of alphaprodine and 20 mg. of succinylcholine. Throughout the procedure 100% oxygen was given.

The patient was placed in an ice-water bath and after 30 minutes was taken out; her body temperature had reached 34 C (93.2 F). While in the bath the patient received an additional 30 mg. of succinylcholine and 100 mg. of thiamylal intravenously to prevent shivering. Her temperature leveled off at 32.5 C (90.5 F), and the operation was begun at 11 a. m. A right-sided thoracotomy was performed. The interatrial defect was successfully closed within four minutes. The operation ended at 2:15 p. m., by which time the patient's esophageal temperature had risen to 34 C. Warming was begun immediately after completion of surgery. When the temperature reached 36 C (96.8 F) the patient removed the endotracheal tube herself. Posthypnotic suggestions were given, relevant to well-being, comfort, and ability to breathe deeply and cough adequately. At 4 p. m. her temperature had reached 36.5 C (97.7 F) and she was taken to the recovery room in good condition. She made an uneventful recovery.

Adult Patients.—Adults, as well as children, can benefit from the use of hypnosis in combination with reduced doses of anesthetic drugs. In the following four patients mitral commissurotomy was performed under hypnoanalgesia.

CASE 4.—A 56-year-old woman was admitted for mitral commissurotomy. She was seen the night prior to surgery and responded well to hypnotic suggestion. The morning of surgery she received secobarbital, 50 mg., and diphenhydramine, 50 mg., as premedication. She was brought to the operating room awake but relaxed. For 15 minutes prior to induction of anesthesia the patient was given 100% oxygen to breathe. An 18-gauge needle was securely placed in a vein of the right hand and an infusion of 5% dextrose in water begun. At 9:20 a. m. 75 mg. of thiamylal sodium was injected intravenously. At the time the drug was injected the patient was again hypnotized. Under direct vision the larynx and trachea were sprayed with 5% topical hexylcaine solution. An endotracheal tube was inserted and 100% oxygen was administered throughout the procedure. Just prior to the incision, at 9:40 a. m., 20 mg. of alphaprodine was injected intravenously. The chest was opened at 10:20 a. m., at which time the patient was able to open her eyes on command. Valve fracture was performed at 10:52 and 10:57 a. m., and the patient was able to respond by opening her eyes, when asked to, after each fracture. The operation was completed at 12:15 p. m., and the tube was removed after posthypnotic suggestions were given. On extubation the patient was awakened. She responded in a most satisfactory way and made an uneventful recovery. Minimal doses of narcotics were required postoperatively.

Case 5.—A 52-year-old woman was admitted for mitral commissurotomy. She was seen two days prior to surgery and responded well to hypnotic suggestion. The morning of surgery she received secobarbital, 50 mg., and diphenhydramine, 50 mg. She was brought to the operating room awake but calm. Hypnosis was reinduced in the operating room and an infusion of 5% dextrose in water was begun intravenously. Thiamylal sodium, 100 mg., and alphaprodine, 20 mg., were injected intravenously. Endotracheal intubation was performed with ease after the vocal cords were sprayed with 5% topical hexylcaine solution. Throughout the procedure 100% oxygen was administered. Prior to incision an additional 50 mg. of thiamylal sodium was injected. The entire procedure took two hours, during which time the mitral valve was fractured three times. The patient was able to open her eyes on command after each fracture. At the end of the operation the patient was given appropriate posthypnotic suggestions and extubation was performed. Then she was asked to awaken, which she did immediately. Postoperatively she required minimal amounts of sedative drugs and made an uneventful recovery.

Case 6.—A 58-year-old woman was admitted for mitral commissurotomy. She was seen the night prior to operation and was able to respond to hypnotic suggestions only so far as relaxation was concerned. The morning of surgery she was given secobarbital, 50 mg., and diphenhydramine, 25 mg. A catheter was inserted into the right antecubital vein, and, during the induction of anesthesia with 150 mg. of thiamylal sodium, hypnosis was again attempted. In order to obtain proper visualization during laryngoscopy 20 mg. of alphaprodine and 30 mg. of succinylcholine had to be given intravenously. The operation lasted for two and one-half hours, during which time the patient received 100% oxygen only and an additional 50 mg. of thiamylal sodium. Mitral commissurotomy was performed successfully, and at the completion of surgery the endotracheal tube was removed. The patient was awakened soon thereafter. Posthypnotic suggestions were given prior to awakening but she nevertheless required average doses of postoperative narcotics. She made an uneventful recovery.

Case 7.—A 39-year-old woman was admitted for mitral commissurotomy. During the previous year she had had several episodes of cerebral embolization, from each of which she recovered. She was interviewed two days prior to surgery and found to be an excellent hypnotic subject. She was able to reach a deep trance level. She was seen again the next day and hypnosis was reinduced, with emphasis on producing anesthesia of the chest. She responded very well. The morning of surgery she was taken to the operating room asleep in response to posthypnotic suggestion. She was given no premedication. She was rehypnotized in the operating room in response to a prearranged signal. An intravenous infusion of 5% dextrose in water was begun and 100 mg. of thiamylal sodium was injected intravenously. Endotracheal intubation was performed with ease, after the vocal cords were sprayed with 5% hexylcaine topical solution. Throughout the procedure 100% oxygen was given. To insure that the patient would remain quiet during the first valve fracture 30 mg. of succinylcholine was given intravenously. The patient was able to open her eyes on command after each attempt at valvular fracture, which was performed three times.

At the termination of the operation, two hours later, she was given appropriate posthypnotic suggestions with regard to comfort, relaxation, and the ability to breathe deeply and cough adequately. She was then asked to remove the endotracheal tube herself, which she did. She was then taken to the recovery room and asked to awaken, and she responded immediately. This patient made an uneventful recovery, requiring no narcotic drugs postoperatively.

Hypnoanesthesia.—The operation of mitral commissurotomy has, until now, never been performed with the patient entirely under hypnosis. The case I am about to describe is the first mitral commissurotomy on record in which hypnosis was the sole means of anesthesia.

Case 8.—A 42-year-old woman entered the hospital for mitral commissurotomy. Two years prior to this she had undergone an operation for multiple vein ligation and stripping under hypnoanalgesia, which I reported previously.[15] Because of the successful result obtained in the former operation she was sufficiently motivated to have the mitral commissurotomy performed under hypnosis. She was seen three days prior to surgery and responded extremely well to hypnotic suggestions. During the three-day conditioning period she was able to reach a deep trance level and achieve complete anesthesia of the chest wall. Because of her response I felt encouraged to attempt the procedure entirely under hypnosis. The night prior to surgery she was given no sedative drugs and slept well all night in response to posthypnotic suggestion. The morning of surgery, at 7 a. m., she was rehypnotized in her room and brought to the operating room in a deep hypnotic trance. She was given oxygen to breathe for 10 minutes, during which time an intravenous infusion of 5% dextrose in water was begun. Endotracheal intubation was performed, after the vocal cords were sprayed with

5% hexylcaine solution. The operation began at 7:45 a. m. Throughout the procedure the patient was able to open and close her eyes in response to command. She tolerated the endotracheal tube without any difficulty. Throughout the entire operative procedure 100% oxygen was administered. At one point during the operation, when it was necessary to facilitate the surgery by making the operative field quieter, 30 mg. of succinylcholine was given by intravenous drip. This was the only drug which the patient received during the procedure. Succinylcholine is a muscle relaxant with no analgesic or anesthetic effect. When the operation was completed, at 10 a. m., the patient was awakened gradually by being brought out of the hypnotic trance. Prior to awakening she was given posthypnotic suggestions relative to comfort, deep breathing, and ease of coughing and was told that she would be asked to remove the endotracheal tube by herself. She was then asked to awaken. With the endotracheal tube still in situ the patient was asked to shake my hand and to squeeze it tightly. She responded readily. She was informed that the operation had been completed and was performed successfully under hypnosis. After aspiration (by suction) of the mucus from the mouth, pharynx, and trachea the patient was asked to remove the endotracheal tube and hand it to me. She responded readily. She was then asked to wet her lips and to stick out her tongue, which she likewise was able to do. She was taken to the recovery room, wide awake and alert, but with total operative amnesia. During the postoperative period, she required no narcotics or sedative drugs. She made a rapid and splendid postoperative recovery.

Comment

What is the advantage of having the patient remove her own endotracheal tube? This informs us that the patient is completely awake and capable of a coordinated muscular effort, the performance of which requires a high level of integration. It also indicates that no serious cerebral embolic phenomena have occurred during surgery.

Although anesthesia by means of hypnosis cannot be induced in every patient as surely as chemical anesthesia, and therefore will never replace or universally substitute for chemical anesthetic agents, there is much to be gained by the use of hypnosis in suitable cases. Hypnosis has a great deal to offer the anesthesiologist in the proper management of preoperative fear, anxiety, and tension. In cardiac surgery it enhances the patient's ability to withstand the surgical and anesthetic procedures. The use of posthypnotic suggestion will also aid the patient in his postanesthetic and postoperative recovery.

Hypnosis is not a substitute for proper medical therapy or good surgical handling of the patient. What is needed for the sick patient is what Meyer has called "warmth without heat, light without fire, and air without drafts."[16] The calm, quiet, kind reassurance which can be induced with hypnotic techniques may give the patient an inner peace and fortitude that cannot be equaled by tranquilizing drugs. It offers the patient a warm and steady hand which can help guide him safely through the anticipated surgical and anesthetic experience.

Conclusions

Hypnosis can be an invaluable aid in the anesthetic management of the patient undergoing cardiac surgery. Its effective applications include the allaying of fear, the quieting of anxiety, reduction of the total anesthetic dose, the production of analgesia and anesthesia, a safe and amnesic surgical journey, and, as a result of posthypnotic suggestion, a pleasant postoperative recovery and a greater motivation toward getting well.

Hypnoanalgesia was successfully employed in the closure of interatrial septal defects in three children and in mitral commissurotomy in four adults. The first mitral commissurotomy performed with hypnosis as the sole means of anesthesia has also been documented.

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ADDICTION, ADDICTING DRUGS, AND THE ANESTHESIOLOGIST

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Patients who are addicted to narcotics pose a special problem to the anesthesiologist because they sometimes require unusually large doses of premedicants and anesthetics, manifest withdrawal symptoms while in the hospital, develop complications (e. g., tetanus and hepatitis) from previous infections, or act in devious ways to conceal or satisfy their need for narcotics. Any drug with analgesic, relaxant, or euphoric properties is potentially addicting. This applies to meprobamate as well as to meperidine. It also applies to volatile anesthetics like nitrous oxide and fluothane. Anesthesiologists are advised to refrain from sampling anesthetic drugs for any reason. When a physician uses potentially addicting drugs to relieve pain he exercises a sacred right, but he also assumes tremendous responsibilities.

At first glance anesthesiology may seem far removed from addiction. Actually, anesthesiologists have a close professional and, occasionally, personal interest in this subject. Anesthesiology is unique in that all patients benefiting from this service receive a combination of drugs which possess a high addiction potential.

To use these drugs intelligently one must have an extensive background in pharmacology, chemistry, and physiology. This education is a prerequisite for the safe administration of currently available anesthetics and enables the anesthesiologist to make decisions which affect not only health but life itself. It further contributes to proper management of unusual problems which may arise. An example of this is the situation which occurs when a narcotics addict becomes a surgical risk.

While narcotics addiction is more likely to be seen by physicians practicing in heavily populated areas, it does not follow that doctors in other areas can dismiss from their minds the possibility of having an addict as a patient. Americans are on the move, and as this continual relocation occurs addicts are scattered throughout the country and inevitably thrown into contact with potential addicts. This type of association is one of the prime factors in the spread of addiction.

Four states currently contain 77% of known addicts: New York (45%), Illinois (14%), California (13%), and Michigan (5%). Following at a distance with a less intensive problem are Texas, the District of Columbia, Missouri, Ohio, New Jersey, and Pennsylvania.

According to latest figures 59% of addicts are Negro, 27% Americans of European stock, 7% Puerto Rican, 5% Mexican, and 2% miscellaneous.[1] Sociological factors apparently play a major role in addiction among Negroes, whereas the prime factor among Caucasians seems to be personality disturbance. Although no single factor is universally accepted as the cause of addiction, the problem is generally recognized as a sad reflection of the critically unbalanced social, moral, and cultural state of our present civilization. As such, it is important to all of us.

No one can quote, without debate, a figure which represents the exact number of addicts in America. Although this number may not be known, enough are present to create a problem. And since addicts periodically need surgery, the management of their addiction and its relationship to anesthetic and analgesic requirements is a matter of interest to all anesthetists.

Recognition of Addiction

Statistical Picture.—The general statistical picture of the addict is indicative but not always specifically applicable. Of currently known addicts 60% are between the ages of 21 and 30 years. Only 12% are aged under 21. Seventy-eight per cent are male. Diacetylmorphine (heroin) is the preferred drug among addicts outside the medical profession, whereas the latter prefer meperidine (Demerol) hydrochloride. Among diacetylmorphine addicts over 90% begin the treadmill through the use of marijuana.[1]

One cannot describe a satisfactory personality picture of the addict, because it will vary with the circumstances under which he is seen. Psychiatrists and social workers often find him quite likable, for the addict usually responds to genuine personal interest. Law enforcement authorities, on the other hand, see an entirely different picture.

It is purely a matter of conjecture which face the addict will show when confronted with an emergency surgical situation where, at best, he faces a controlled withdrawal from narcotics. Successful management of the addict under these circumstances depends to a great extent on the attending

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physician's awareness of the problem and its ramifications and the tact and sympathy with which he faces the situation.

Physical Examination.—Physical examination may reveal many of the telltale age-old signs of narcotics addiction. Pinpoint pupils and needle marks on the skin overlying accessible veins, accompanied by varying amounts of phlebitis, cellulitis, scarring, and venous occlusion, may serve as pathognomonic signs. The antecubital area, frequently the one preferred for injections, may be obscured by a tattoo, obtained in an effort to minimize evidence. The addict, however, is as aware of the significance of needle marks as are authorities and often uses veins other than the antecubital. Some of these veins are between the fingers and toes, behind the knees, on the dorsal aspect of the hand or foot, and, rarely, the external jugular.[2]

Withdrawal symptoms also serve in diagnosis if withdrawal is imminent. Sneezing, anxiety, yawning, goose flesh, nausea, and vomiting are most often seen.

Diagnostic Test.—The nalorphine (Nalline) hydrochloride test, with the antagonist administered in 3-mg. doses under a controlled clinical situation, causes the pupils of persons who have recently received narcotics to dilate. There are many legal and medical problems associated with this examination, however, and interested physicians are advised to acquaint themselves thoroughly with the problems that may occur before performing this test.[3]

Attitude.—Friendly interest, reassurance, the ability to withstand verbal assaults without undue remonstrance, and a patient explanation of why it is so important to obtain a complete history will frequently encourage cooperation and make the diagnosis easier.

It is suggested that anesthesiologists include the question, "To what drugs have you been addicted?" to their routine questions, inasmuch as the list of drugs with potentially addicting properties is constantly increasing. The question, "Have you ever been addicted to—" is a rather poor one, for it permits the patient simply to avoid the issue with a negative response, the doctor often being none the wiser.

Special Considerations

If a history of addiction is obtained, several factors should be considered. If the addiction is past history, the use of narcotics should be avoided if it is clinically permissible. The judicious use of barbiturates, tranquilizers, and scopolamine in such cases usually provides the desired pharmacological effect, and the hazard of readdiction is avoided. For, while it is not true that "once an addict, always an addict," it can be stated with a degree of accuracy that once an addict, always a potential addict.

If narcotics are required to control pain, they should be used in adequate amounts. The patient must have an individually tailored program, however, and attenuation of the dosage must be attempted as soon as possible. A most useful adjunct in controlling pain and apprehension, so often overlooked in the increased tempo of modern medicine, is the frequent visiting of the patient by his physicians. Sedatives and analgesics are useful weapons in the fight against pain and anxiety, but they are poor substitutes for personal attention.

If the patient is currently addicted, surgery should, if possible, be postponed until withdrawal is accomplished. Management is much easier if the addict is not concerned about potential withdrawal symptoms. More important, tolerance is reduced so pain can be controlled with reasonable quantities of analgesics.

Tolerance varies remarkably with the individual. A case in point is that of a young man who recently asked officers of the Los Angeles narcotics squad to arrange for treatment of his addiction. His tolerance was so great that he could not keep ahead of withdrawal symptoms, particularly since he depended on theft as a source of supply. At the time seen, he was using 20 tablets of 1/16 grain (0.004 Gm.) of dihydromorphinone (Dilaudid) hydrochloride intravenously every four hours.[4]

If the patient is addicted and surgery cannot be postponed, narcotics should be reasonably administered to provide comfort before and after surgery. The patient's addiction, however, does not provide a reason to be careless in administering drugs. Furthermore, surgical convalescence is not a contraindication to withdrawal of narcotics, when the patient's condition permits. Only careful observation can make withdrawal under these circumstances a success, however, for one must constantly try to differentiate between somatic pain and psychological distress or misrepresented pain; the addict, particularly if personnel are unaccustomed to working with addiction, can frequently manipulate the situation to his advantage.

When an addicted person needs emergency surgery, the following factors should be taken into consideration. 1. It is unlikely that adequate veins will be available at the time of the operation. Because of this, cut-downs should be planned prior to surgery. 2. Administration of narcotics must be kept to a minimum and terminated as quickly as possible. This plan should be outlined from the first, so the addict will have no misinterpretation of what can be expected. 3. Some addicts require large amounts of intravenously administered barbiturates to obtain the full effect. Youth may be one of the factors that contribute to this increased tolerance. Not infrequently the patient will also have a history of alcoholism.[5] 4. Individual response to preanesthetic and postanesthetic sedatives and analgesics is unpredictable, and optimum medication cannot always be achieved. As a working example, the U. S. Public Health Service Hospital at Lexington, Ky., gives the average adult addict morphine sulfate, 10 mg.; scopolamine, 0.6 mg.; and pentobarbital, 100-200 mg., for premedication. Chlorpromazine, 25 mg., is added as indicated. 5. Addicts may require more postoperative analgesia initially than nonaddicts, a factor which makes close observation essential. 6. Some physicians who manage addicts as surgical patients feel that they do not tolerate stress too well. Until future studies clarify this point, it is well to anticipate possible adrenal cortical insufficiency during surgery.[6] 7. If facilities are available where management of addiction is common practice, it is well to consider sending the patient to these facilities for both withdrawal and definitive care.

In recent years a newly recognized syndrome of narcotics addiction and withdrawal in babies born of pregnant women addicted to diacetylmorphine has been described. It is important that physicians be aware of this possibility, for improper treatment or lack of treatment may result in the death of the newborn infant. When the umbilical cord is clamped the child is forthwith deprived of his narcotics supply. Unless quickly recognized this deprivation may be fatal, particularly if the mother has developed a high tolerance and/or has had a recent injection of narcotics.

Schneck[7] has outlined several symptoms which may be incorrectly interpreted unless the attending physician is aware of this syndrome. The babies are restless and irritable and emit a relatively continuous, high-pitched, piercing scream. As is true of adult addicts in withdrawal the babies yawn, are sleepy, sneeze, sweat, and have stuffy noses and copious secretions. Anorexia, vomiting, and diarrhea are also observed, and, more important, convulsions. The latter symptom is often mistaken for brain damage, and valuable time is lost waiting for a neurological evaluation.

In the meantime the combination of vomiting, increased mucus, and the usual problems that occur with the respiratory physiology and anatomy of the newborn infant may lead to sudden respiratory failure.

An additional hazard exists if the mother has been given narcotics without the physician's awareness of her addiction, and the resulting symptoms in the child are interpreted as narcotic depression. For if nalorphine is given under these circumstances, the baby may die.

The death rate thus far has been quite high among addicted newborn infants. Treatment, if instituted early, may reduce this mortality. Suggested measures include aspiration, oxygen as indicated, and administration of methadone, tranquilizers, or both, in diminishing amounts.

The situation can be unpleasant. Few, if any, addicted mothers seek prenatal care, arriving at the last minute because of necessity. They may exhibit signs of preeclampsia, infected veins, hepatitis from contaminated needles, and, because many resort to prostitution, venereal disease. Cooperation may be minimal, with a number leaving the hospital against consent to avoid withdrawal symptoms. In those who stay it is often difficult to manage withdrawal because of narcotics smuggled to the patient by friends.[8]

Several complications caused by group use of contaminated needles may occur in addicts and subsequently affect the choice and administration of anesthesia. Among those reported thus far are malaria, septicemia, cellulitis, phlebitis, venereal disease, bacterial and mycotic endocarditis, tetanus, and hepatitis.[9] The latter two complications are most frequently seen.

The occurrence of tetanus in narcotic addicts was first reported in an editorial in the *Lancet* in 1876. Since then several series of case study reports have appeared. One of the largest is that of Levinson and co-workers,[10] who surveyed 22 cases of tetanus, 12 of which were in diacetylmorphine addicts. Addicted tetanus victims were found to be younger than nonaddicts in this series (75% of addicts were between 20 and 30 years of age, as contrasted to 60% of nonaddicts who were over the age of 40). Of the addicts 75% were female. All were Negroes. All addicts lapsed into coma, with higher temperatures, much sooner than nonaddicts (12-36 hours). Copious secretions complicated an already difficult situation. Most nonaddicts complained of trismus as the first symptom, but addicts initially noted a stiff neck or back, or both.

Although treated in the same manner a 100% mortality prevailed among addicts, whereas only 40% of nonaddicts died. This was attributed to delayed diagnosis because of the addicts' reluctance to seek hospitalization until too late.

Hepatitis constitutes a general problem, since certain persons with or without evidence of hepatic disease may be carriers for several years. Thus, the addict may well be an important epidemiologic factor in spreading this disease. A series of five cases acquired from the same contaminated needle and medicine dropper, in addicts ranging in age from 15 to 24 years, was recently reported.[11] And, interestingly, Havens has commented on the history of an 18-year-old addict who suffered three separate attacks of self-limited jaundice, caused by immunologically different virus, within a period of two years.[12] In suspicious cases, the presence of hepatitis may be an assisting factor in establishing a diagnosis of narcotics addiction.

Prevention

Much has been said about the treatment of addiction and its complications. More worthwhile, however, is a discussion of the prevention of addiction.

When a physician decides to use potentially addicting drugs to relieve pain, he employs a sacred and marvelous right. He also assumes tremendous responsibilities. It is impressive that, while 80% of addicts admitted to the U. S. Public Health Hospital in Lexington, Ky., in 1957, were social addicts (persons receiving drugs from illicit sources), 20% were medical addicts—persons who became addicted while taking drugs for therapeutic purposes and who depended on physicians for their source of supply. The opiate principally involved in the latter cases was meperidine.[13]

Meperidine is also the preferred narcotic among addicted members of the medical profession. Easily acquired and simply given, it produces a relaxation which relieves tension and, for a time, the problems of a busy practice or disturbed personality seem to disappear.

Significantly, this drug went through a long period of sales promotion which declared it free from addicting properties. It was hoped that this type of promotion would never mislead the profession again, for it is now recognized that any drug with analgesic, relaxant, or euphoric properties is potentially addicting. But not long ago a similar unfortunate campaign promoted meprobamate (Miltown, Equanil) as a safe psychological cure-all. Too late some are finding that it, too, is addicting.

Recently a doctor was sued for $301,000. The charge: A 36-year-old woman had been addicted to narcotics by her physician. One of the factors which irritated her was that he allegedly was using part of the narcotics prescribed for her for his own purposes. The case was settled out of court.

Experiences with varying phases of justice have created a growing tendency among contemporary American physicians to practice medicine with one eye focused on the patient and the other on his attorney. This antediluvian situation has caused far more harm than good. One important reaction, sometimes fortunate, sometimes not, has arisen from it—doctors have developed an extreme sense of caution. In narcotics addiction this has been an asset, for caution is the watchword in its prevention.

Responsibility of Physician

When a physician elects to use narcotics as a part of his armamentarium, he should review certain facts.

Does the patient really need narcotics, or would personal attention, discussion, encouragement, and the use of physical therapy or regional anesthesia be a better choice for subduing pain or allaying anxiety? Far too often one hears an attending physician comment to his resident, "Give him my routine orders for pain." There are no routine orders for pain. Nor is there any excuse for the standing order, "narcotic X q 3-4 hours p. r. n. pain," unless this statement is evaluated daily as the changing needs of the patient are considered.

Analgesics should be chosen to fit the particular case. Physical addiction can usually be accomplished if a short-acting narcotic is given at frequent intervals over a two-week to three-week period. For this reason meperidine would seldom be indicated as a postsurgical analgesic, if analgesia must be prolonged. Levorphanol (Levo-Dromoran) tartrate, methadone, and similar narcotics which are long-acting, available in orally given preparations, and do not permit tolerance to build up so rapidly are preferable in such cases to meperidine or morphine.

Switching narcotics in an attempt to avoid or decrease addiction is not usually successful. Narcotics have a cross-tolerance, and development of tolerance to one results in increased tolerance to all.

Addictive potentials of "mild" analgesics should not be underestimated. One frequently finds the statement in medical literature that codeine addiction seldom exists. It is more accurate to state that it is seldom recognized. For, by the time a person who began his narcotics addiction with codeine is apprehended, he has usually changed to something stronger. Addicted physicians with whom I have talked, who have had personal opportunity to compare the detrimental effects of both codeine and meperidine, have exhibited far greater respect for the problems inherent in codeine withdrawal than for those experienced with meperidine.

Because of constant use in their profession, anesthesiologists find it simple to acquire narcotics (legally, or, for a time, illegally). This fact merits mentioning another precaution. Except under circumstances of strict emergency, narcotics should not be administered to one's self or family. If this rule is not observed, and the proper situation exists when it is broken, disaster can occur.

If a patient becomes addicted, physiologically or psychologically, or both, to a narcotic while in the hospital, it is the attending physician's responsibility to try to effect withdrawal before releasing the patient. If he is unsuccessful, although not required by law to do so, he is wise if he encourages the patient and his family to place the addict in an appropriate institution that can adequately handle withdrawal problems.

Hazards for Anesthesiologists

For anesthesiologists, there is another point of prophylaxis that should be mentioned. It is interesting to note that the one feature of gas anesthetics immediately accepted, even to the point of ignoring their potential for relieving pain, was the ability of ether and nitrous oxide to cause euphoria. When Crawford W. Long was a medical student, he frankly admitted inhaling ether for its exhilarating properties. And it became routine for several young men, and frequently ladies, of the town to hold ether sprees in Long's office two or three times a week.[14]

Sniffing gases for psychological effects has not disappeared with the passing of time. In 1957 the warden of San Quentin prison expressed concern because inmates had begun the practice of inhaling solvent fumes as a substitute for drugs or alcohol. Since available solvents were either gasoline, paint thinner, paint remover, or carbon tetrachloride, the physical damage to the sniffer was potentially great. A third of the cases brought before the prison's disciplinary committee that year were for infractions of the rule prohibiting this practice.

Foolhardy individuals, particularly emotionally immature persons, outside prison society not infrequently perform similar acts. The anesthesiologist who acts as a consultant in cases of poisoning will inevitably run across cases of fatal or near-fatal poisoning from inhaling solvents or the ingestion of "social" alcohol substitutes such as antifreeze.

Anesthetic gases still hold a fascination for some, although this problem is not one that usually affects the general public. Within the profession, however, particularly among anesthetists and dentists, they remain an easily accessible pharmacological escape for those who enjoy synthetic release, be it ever so brief, from tension and anxiety.

Many institutions where anesthesiology is taught permit the not uncommon practice of smelling gas mixtures to check both concentration and content. For the most part, this is an innocuous procedure. For some, however, it may be an unfortunate introduction to the euphoric effects of these gases. At the end of a two-year or three-year residency, particularly since most doctors seem to give little consideration one way or another to the practice, a habit leading to addiction may be produced in susceptible persons. At Children's Hospital in Los Angeles it is stressed that no one, resident or chief, should develop the habit of smelling anesthetic mixtures. For it is felt that to those persons who may be termed "addiction-prone" the ready access to these gases presents a real hazard, if the habit of smelling anesthetics is encouraged.[15] Pursuing this subject further, it was found that other anesthesiologists had had experiences with anesthetic gas addicts. Some of the anesthetists known to have been involved have at one time been leaders in the field.

Gas sniffers, like narcotics addicts, may be "chippy" (sporadic) or chronic users. Nitrous oxide is often used sporadically because its effects quickly disappear. A case in point is that of a dentist who, in time, became perpetually late for his next appointment because he closeted himself with his gas inhaler between patients for a brief escape from reality.

Cyclopropane sniffers present more of a hazard, for, if they pause during an anesthetic procedure to engage in their habit, they may become incapacitated at a moment when alertness may mean the difference between life and death. One person was known to go so far as to take a tank of cyclopropane gas home with him at night and use it to promote sleep.

Ether and chloroform have also been useful to persons seeking this type of emotional release. Trichlorethylene has its advocates, Derobert having reported a case in 1956 of a death which occurred during addictive inhalation of this gas.[16]

Apart from, but related to, the sniffers is the person who becomes addicted to the intravenous administration of barbiturates. An unusual case history was obtained of a physician who administered thiopental (Pentothal) to himself by intravenous drip, managing somehow to shut it off when the desired effect was obtained without slipping into permanent oblivion.

Recently a London anesthetist was discovered euphorically inhaling a mixture of oxygen, nitrous oxide, and fluothane. Unfortunately, he chose to do this at a time when he was administering an anesthetic to a 2½-year-old child undergoing a herniorrhaphy. The child died as a result of his negligence.

At his trial, where he was found guilty and sentenced to prison, he admitted he had been addicted to the inhalation of volatile anesthetics for seven years. His colleagues belatedly testified that they had seen him inhaling gases from the anesthetic machine before and during surgery on previous occasions.[17]

Almost anything producing the proper effect can, it seems, cause addiction. In 1957 U. S. Navy physicians O'Driscoll and Lindley [18] reported the case of a narcotics addict who had switched to intravenous administration of tripelennamine (Pyribenzamine) hydrochloride. The addict was aware of some 10 associates involved with the same drug.

On checking with the manufacturers the doctors received information that this drug was being used in a similar manner in Detroit. Termed "blue velvet" by its users, it produced an effect less dramatic than but somewhat similar to that of marijuana.

Admittedly, addiction to anesthetic drugs is uncommon. The fact that it does occur, however, suggests that everyone who uses these substances may find it advantageous to refrain from sampling them for any reason. It appears that the position of those who feel residents in training should be discouraged from this habit is fortified.

Summary

Extensive training in the pharmacology of addicting drugs and their constant clinical employment places the anesthesiologist in a vital position when narcotics addicts require surgery. Before treating the addicted patient it is wise to obtain a complete history of the individual problem, so that this history, combined with an awareness of the complications unique to users of addicting drugs, may be used to manage the case in as satisfactory a method as possible.

As resuscitation consultants, anesthesiologists should also be aware of the bizarre habits of addicts which make diagnosis difficult when either resuscitation or anesthesia is indicated.

Constant use of drugs with a high addiction potential should make anesthesiologists careful in personal compliance with narcotics regulations, constantly being aware that routinely handled drugs, including anesthetic gases, are an ever-present threat to susceptible persons.

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MEDICAL, SOCIAL, AND LEGAL ASPECTS OF SUICIDE

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The increased frequency of suicide among the various causes of death makes it too important to ignore as a medical problem. The depressions that lead to suicide are not prevented by threats of either secular or eternal punishment; often they are the results of organic brain disease, occupational injuries, nutritional deficiencies, or intoxications. Popular attitudes, present laws, and the policies of insurance companies also work unjustified hardships on survivors, contribute little toward prevention, and impede the collection of accurate data. Persons who attempt suicide often receive inadequate treatment. During the emergency stage an anesthesiologist can be most helpful. Later the services of a psychiatrist are essential, his chief challenge being to estimate the likelihood of a second suicidal effort. Society should soon be sufficiently mature to deal with this problem more logically than it has in the past.

The problems of which suicide is a manifestation are greater in frequency and consequence than the interest in this field of study would indicate. Suicide is the 11th leading cause of death in the United States. Studies in Philadelphia show that, for every successful suicide reaching the medical examiner's office, at least five additional attempted suicides become matters of police action. In addition, an undisclosed number of attempted suicides, not so classified, are treated under other diagnostic labels in general hospitals. Medical reasoning also concludes that at least some deaths listed as due to accidents have been instances of suicide. Table 1 shows the 11 leading causes of death in the United States in 1956, the last year for which complete data are available.

It is seen that suicide accounts for nearly as many deaths as cirrhosis of the liver, or all congenital malformations combined. As a killer, suicide is

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two-thirds as important as diabetes mellitus and more than half as significant as generalized arteriosclerosis. Organized national efforts are being made to combat tuberculosis, poliomyelitis, nephritis and nephrosis, muscular dystrophy, multiple sclerosis, epilepsy, arthritis, alcoholism, and other conditions. Yet deaths due to suicide outnumber those due to tuberculosis and those due to the rest of the foregoing conditions combined (table 2).

TABLE 1.—*Number of Deaths and Death Rates for Eleven Leading Causes of Death in 1956 and Estimates for 1958 in the United States**

	International Classification†	Cause of Death	Deaths in 1956		Estimated Deaths in 1958	
			No.	Rate‡	In Sample§	Rate
1	410-443	Diseases of heart	602,995	360.5	629,720	365.8
2	140-205	Malignant neoplasms	247,357	147.9	251,670	146.2
3	330-334	Vascular lesions of central nervous system	177,845	106.3	190,910	110.9
4	800-962	Accidents (all forms)	94,780	56.7	90,610	52.6
5	760-776	Certain diseases of early infancy	64,546	38.6	68,950	40.1
6	480-493	Influenza and pneumonia (except pneumonia of newborn)	47,103	28.2	57,030	33.1
7	450	General arteriosclerosis	32,018	19.1	34,390	20.0
8	260	Diabetes mellitus	26,184	15.7	26,390	16.4
9	750-759	Congenital malformations	21,065	12.6	20,670	12.0
10	581	Cirrhosis of liver	17,924	10.7	18,260	11.0
11	963-970-979	Suicide	16,727	10 0	17,840	10.4

* Data from U. S. Department of Health, Education, and Welfare, Public Health Service, National Office of Vital Statistics: Special Reports, National Summaries 48:176-188 (Aug. 14) 1958.

† World Health Organization: Manual of International Statistical Classification of Diseases, Injuries, and Causes of Death, Sixth Revision, Geneva, 1958.

‡ Death rate per 100,000 estimated population.

§ Figures given were the 10% mortality sample for January-December, 1958, projected to a 100% base.

Successful suicides account for 17,000 deaths per year in the United States, an incidence of approximately 10 per 100,000 population. The suicide rate rises during national catastrophes and eras of widespread distress, the highest incidence of suicide in the United States occurring in 1932 when there were 20,646 deaths due to this cause. In addition, there was a high incidence throughout the years of the financial depression, 1929 to 1940. A considerable reduction in suicides occurred during the years of World War II, to a low of 13,231 suicidal deaths in 1944.

Studies on attempted suicide are lacking or of small scope, owing to the fact that this is a difficult field in which to gather statistics. Data on successful suicides afford a basis on which to develop estimates. The following information has been gained from a study of suicides in Philadelphia, completed for 1955.[1] This study revealed that the highest rate occurred in persons 75 years of age and over (table 3). Police records disclose a much higher incidence of attempted suicide among youngsters under the age of 17 years than is generally realized. Adolescence, a period of life normally fraught with turmoil and immature psychological organization, would also seem to be a period significant to the physician in terms of drives toward self-mutilation and self-destruction. The highest suicide rate in Philadelphia occurred in the central city district which tends, as in most cities, to include cheap hotels, rooming houses, and "skid row." Studies in large cities generally agree that suicide is more prevalent in socially disorganized parts of the city.[2] The Philadelphia study, however, did not support the conclusion reached by other surveys that the suicide rate decreases in direct proportion with the distance from the center of a city.

The Philadelphia survey demonstrated significant sex and race differences among suicides, the incidence being greater than two to one among the whites, with white males predominating four to one over white females, and nonwhite males six to one over nonwhite females. The study further revealed that approximately half of the suicides occurred among married people. About 20% were single, 14% divorced or separated, and the rest widowed. About one-third of successful suicides were persons with regular employment; about one-fourth were unemployed; approximately one-eighth were retired; and in the remaining cases the information was unobtainable.

In the majority of suicidal attempts prior to death the victim was claimed to be suffering from some form of illness, either physical or mental. A greater number of suicides have complained of chronic physical illnesses than of mental disorders, although mental depressions are high on the list of complaints. The mental condition of suicides, as obtained from records and interviews with members of families and other relatives, friends, and neighbors, shows a high incidence of "nervousness" or "mood and behavioral changes" (table 4).

TABLE 2.—*Deaths from Selected Causes in the United States in 1956**

Cause of Death	Deaths, No.
Suicide and self-inflicted injury	16,720
Tuberculosis (respiratory 12,978, other 1,083)	14,061
Epilepsy	2,098
Alcoholism	2,066
Deliveries and complications of pregnancy, childhood, and puerperium	1,702
Arthritis and rheumatism (except rheumatic fever, with 1,033 deaths)	1,557
Multiple sclerosis	1,448
Nephritis and edema, including nephrosis	1,140
Poliomyelitis (acute 566; late effects 139)	705
Muscular dystrophy	484

* Vital Statistics of U. S. 1956, vol. II., Mortality Data, National Office of Vital Statistics, U. S. Department of Health, Education, and Welfare, U. S. Government Printing Office, 1958.

Alcoholism appears to play an important part in the decision to attempt suicide and was present in at least 10% of cases studied. It is believed that alcoholism has a considerably greater incidence among suicides than in the general population. Of importance to the medical profession is the finding in the Philadelphia survey that 77% of successful suicides have been under medical care. Of the entire group studied for one year 13% were reported to have threatened suicide. An additional 9% had made one or more previous attempts. In 3% of the cases it was found that both previous attempts and threats were reported. Researchers in this field agree that the 25% incidence of threats or attempts, as noted above, is probably an underestimation.

TABLE 3.—*Suicide Rate per 100,000 Population, by Age, Sex, and Race, in Philadelphia, 1951-1955**

	White		Nonwhite		
Age Group, Yr.	M	F	M	F	Total
75 and over	47.1	7.7	10.8	...	21.7
65-74	35.2	9.2	20.7	3.0	19.9
55-64	35.8	7.4	14.7	1.6	19.7
45-54	16.5	6.6	4.2	1.7	9.9
35-44	9.4	6.2	10.4	1.8	7.3
25-34	6.7	2.8	13.1	1.0	6.0
15-24	2.9	0.7	1.6	1.9	1.8
Total†	12.1	4.0	6.6	1.2	7.2

* Data from Tuckman and Lavell.[1] Rates calculated by dividing total number of suicides in each age group in five-year period by appropriate 1950 census figures, multiplied by five.

† Does not take into account the age-specific rate for each group.

The majority of suicidal efforts take place in the home. This is especially true of housewives. About 20% occur in public places. The Philadelphia study, which was interested in many facets of the personalities of would-be suicides, found that approximately 25% leave suicide notes.

The method applied in successful suicide varies from one locality to another, depending on the availability of various kinds of lethal instruments. One practitioner has reported to us that farmers and rural inhabitants, who are apt to possess firearms, are likely to use this method. Suicide by hanging is more common in areas having a large number of homes with basements. Death by jumping is common where there are high bridges and rapid trains. Suicide by illuminating gas was commoner in days when gas was more plentifully distributed and contained larger fractions of poisonous substances. In successful suicides in the Philadelphia study the methods most commonly employed, in the order of incidence, were as follows: hanging; use of firearms; ingestion of some form of medicament, drug, or poison; inhalation of gas or carbon monoxide; and jumping from high places or in front of rapidly moving vehicles. Cutting, stabbing, and drowning combined accounted for about 8% of all the methods.

Dependable statistics are not available regarding the methods employed in the attempted suicides. Medical experience and the examination of police reports suggest that the taking of barbiturates and other sedatives, as well as cutting and slashing, are the methods most commonly employed in attempted suicides. In many instances attempted suicides would have been successful had it not been for timely intervention by a relative, friend, or neighbor.

Emergency Treatment

The person attempting suicide may be saved by the intervention of the one who first comes on him. Lay persons and physicians as well must act promptly and with intelligence. Therapy for attempted suicide by trauma, e. g., firearms, jumping, or cutting, is usually first-aid and surgical. Attempted suicide with use of gas or drugs involves immediate support of respiration in many instances. The anoxia of inadequate alveolar ventilation, with its threat to brain function, can be reduced by artificial ventilation promptly and intelligently performed. Mouth-to-mouth or mouth-to-nose techniques have been shown to be superior to "manual" methods, so far as the volume of ventilation provided is concerned.[3] Adequate ventilation by this or any other means must be maintained until the patient is admitted to a hospital. The patient should be sent directly to a recovery room and placed in charge of an anesthesiologist. He should not be delayed in the receiving ward, where personnel are less experienced in the therapy required.

Hospital Treatment.—Supportive therapy has greatly reduced the mortality of patients in coma from poisoning. The details of a proper program have been described elsewhere by a number of authors.[4] Essentially it consists of maintenance of alveolar ventilation and tissue perfusion, prevention of infection, and protection of skin and mucosa from injury. Oxygenation and removal of carbon dioxide demand a patent airway and may require tracheal intubation and bronchoscopic aspiration, tracheostomy, or both. Provision of an adequate tidal volume of respiration may require use of a mechanical ventilator. Oxygen need be added only if the saturation of hemoglobin is subnormal, or if arterial oxygen tension is below 100 mm. Hg.

Tissue perfusion is supported by maintenance of a normal blood pressure through intravenous infusion of fluids and use of pressor drugs if indicated.

TABLE 4.—*Reported Mental Condition of Suicides, by Race and Sex (in Percentages), in Philadelphia, 1951-1955**

	White		Nonwhite		
Mental Condition	M (n=496)	F (n=175)	M (n=59)	F (n=12)	Total (n=742)
Presumably normal	4	3	0	0	4
Nervous or mental condition	27	55	19	33	33
Mood or behavioral changes	39	29	24	17	35
Not stated	30	13	57	50	28

* Data from Tuckman and Lavell.[1]

Electrolyte determinations and measurements of urine volume and specific gravity will aid in determining whether sodium or chloride should be added to the perfusate. A catheter left in the urinary bladder assists in this. Antibiotic therapy, turning the patient hourly, pummeling the chest wall energetically, and aspiration of respiratory tract secretions minimize the danger of pulmonary infection. The heels and knees should be padded to prevent pressure sores. The eyelids must be kept shut to avoid corneal damage. A continuous record of vital signs is essential.

With these measures established one can consider three other types of treatment. Nonconvulsive electric stimulation of the central nervous system offers little. Use of analeptic agents remains controversial, with our vote recorded against their use except in severe depression. The newest substance, bemegride (Megimide), remains to be evaluated. It may increase respiration but has not yet been shown to shorten the duration of coma after ingestion of barbiturates. Use of the artificial kidney to remove drugs which are not bound to protein, in markedly depressed patients, deserves serious consideration.

Role of the Psychiatrist

A psychiatrist should assume major responsibility for the patient as soon as emergency treatment has become effective. The development of a positive relationship between patient and physician is facilitated if the physician is present as the patient awakens. Also of importance is the fact that, during this twilight state, significant feelings may be revealed which may be suppressed later on.

The psychiatrist's chief challenge is to estimate the likelihood of a second suicidal effort. An adequate history contributes greatly to the accuracy of such an estimate. Indications of a drive toward suicide are various combinations of the following factors: (1) a history of previous suicidal attempts; (2) hints from the patient's conversation or actions that he has been contemplating suicide (in most cases the patient gives some clear indication of his intent prior to the act); (3) a story of severe depression with insomnia, anorexia, loss of interest, and self-recrimination for a period immediately preceding the attempt, or a history of such depressive episodes in the past; (4) depression in a successful, driving, conscientious, somewhat compulsive person between the ages of 45 and 65 years; (5) a history of a period of well-being, overactivity, poor judgment, and perhaps some euphoria, as in a hypomanic reaction preceding the attempt; (6) lack of any obvious, external cause for the patient to be depressed or suicidal, suggesting the depression to be of an endogenous nature and hence likely to be more serious; and (7) a history of recent seeming emergence from a depressive or hypomanic attack. The most dangerous period, from the point of view of suicide, is when the patient seems to be recovering from such psychological illnesses and the physician's vigilance and concern relax.

One of the first tasks of the psychiatrist, then, is to obtain as accurate a history as possible, regarding both the circumstances surrounding the suicidal attempt and the patient's personality adjustment for several months previous. There are some personal factors which suggest that a serious suicidal attempt is less likely. Among these are a hysterical, dramatic, "acting-out" type of personality; membership in one of various ethnic groups in which the suicide rate is significantly lower than in others, such as Negro and southern European; a sudden emotional crisis during which the patient has acted impulsively, such as a lover's quarrel; an acute alcoholic or drug debauch; or a reaction to some current real problem, such as an illegitimate pregnancy or the death of a loved one.

Adequate care for the first several days after the attempt demands security screening in the patient's room and continuous observation by a psychiatrically trained nurse or attendant. Such constant observation should continue for at least two or three days. If facilities are not available in the hospital where the patient has received emergency treatment, he should be moved as soon as possible. This might be to the psychiatric unit of the general hospital where he was first treated, to a room or a ward on the psychiatric service of a municipal hospital, or to a psychiatric institution, depending on the medical resources of the community.

A Suicide Control Program.—In London and New York City a person fearing that he may attempt suicide can obtain immediate help day or night by contacting police or public health authorities. This is a start on what could prove to be an effective program for reducing suicide. The broad outline of such a suicide control program would include (1) the immediate reporting of suicides and attempts to responsible public health officials, (2) provision of immediate definitive medical attention, (3) recognition that such patients must not be left alone for the first few days after the attempt, and (4) transfer of such patients to a psychiatric division of a hospital for two or three days of observation. If a responsible adult relative refuses such a transfer he must be made to sign a statement to this effect, indicating awareness and acceptance of his responsibility.

Long-term follow-up plans would be the combined responsibility of the health department, and the medical staff and social service unit of the hospital. Threatened suicide without actual attempt could be reported to the same office, and a professional staff member could evaluate the nature of future steps. All reports would be strictly confidential.

Collection of Data.—The magnitude and parameters of the suicide problem require further definition. One approach to this is to improve the collection of data. There is no accepted formula for reporting information about suicides or attempted suicides. There is no listing in the standard nomenclature for the diagnosis of attempted suicide. In 2,750 of 3,049 counties in the United States coroners are not required to be medical men.

Therefore, in many cases of sudden death, no autopsy is performed. Many of the standard textbooks in forensic medicine have only scant references to the problem. The belief that reporting such cases would be a violation of doctor-patient confidence or that it stigmatizes the patient is frequently raised; these rationalizations seem to serve best the contention that our society does not really accept the suicide problem as a critical one. There is also the finding that only a small percentage of persons who attempt suicide eventually carry it out successfully, a viewpoint corroborated by Carr[5] and by Hendin.[6] It is important to determine if there are indeed two population groups, the "attempters" and the "doers." Improved data collection is urgently needed.

Suicide and the Law

The legal position toward suicide has been a reflection of the moral viewpoint adopted by our Western civilization. As Farrar[7] has indicated, the permissive attitude toward suicide of the pagan religions of antiquity was transformed into a severely restrictive and punitive one under the influence of early spokesmen of the Christian faith. Dogma was then converted into common law, and suicide became a crime punishable in Great Britain, for example, by the forfeiture of lands or chattels of the deceased (finally abolished in 1870). Although it is seldom enforced, the law in Britain still views attempted suicide as a crime punishable by two years' imprisonment. In most jurisdictions in the United States neither suicide nor attempted suicide is a criminal violation. We believe that it would be a backward step to make attempted suicide illegal once again. If nothing else, this would certainly interfere with data collection. Suicide is not a problem to be solved by law; rather, it demands the most thoughtful efforts of medical and social scientists.

There are aspects of liability which deserve comment. Most states treat the aiding or encouraging of suicide as a criminal act. This has particular importance for the doctor who frequently faces an incurably ill patient who pleads for an end to his suffering. Although the courts have tended to be lenient in ruling on cases such as these, the doctor has faced the censure of the medical profession.

In the problem of hospital liability, when an inpatient commits suicide, the most important criterion is whether or not the suicide could reasonably have been anticipated. Another factor would be whether reasonable precautions were taken to prevent the suicide. Hospitals may be held liable for employing persons who are given the responsibility of supervising a suicidal person and who are not competent to carry out this task. Essentially the same criteria apply to the individual physician who is treating the potentially suicidal patient. As soon as such a patient is seen, the physician should notify a responsible member of the family and should insist on hospitalization. Psychiatric referral should also be required, since the psychiatrist is more capable of evaluating a second attempt and thus of bearing the medicolegal responsibility.

In connection with an insurance company's responsibility to pay a claim on a decedent who commits suicide, in a case in which the policy declares its lack of liability in such cases, most jurisdictions hold that the company is not responsible for payment; but there is a growing minority of opinion which declares that, if the suicide was undertaken because of an "insane compulsion" without realizing the consequences of the act, the company is liable. As to the problem of workmen's compensation, Guttmacher and Weihofen[8] explain that, if a person's suicide is connected with a mental disorder arising from an accident at work, and the act is carried out without conscious volition to produce death, the case is compensable. However, if the person had the ability to recognize the purpose and the physical effect of the act, then the chain of causation is broken.

The Social Problem of Suicide

Vail[9] has raised the following questions regarding suicide: "To what extent is it given to man to take his own life?" and "What right do we have to interfere with his plans, if this is what he has decided to do?" Western civilization is sufficiently mature to face these challenging queries. An enlightened public can be led by physicians and sociologists, if the latter view suicide in the perspective of careful inquiry now applied to other diseases.

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CARDIOVASCULAR RESPONSES TO TRANSCRANIAL ELECTRIC STIMULATION IN MAN AND DOG

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Factors that might contribute to the mortality associated with electroconvulsive therapy were sought in a study of 400 treatments. Most of the patients received thiopental (average dose 400 mg.) intravenously before the treatment, and all received succinylcholine chloride and artificial ventilation with oxygen during the period of apnea. Vagal arrhythmias (marked tachycardia, occasional cardiac arrest) never occurred in patients who had received atropine but occurred frequently in patients who had not. Extravagal arrhythmias also occurred frequently and were not uniformly preventable by either chlorpromazine or quinidine therapy. All patients had transitory increases of systolic blood pressure. The increases were about half as great in patients who had received tetraethylammonium chloride as in patients who were not so protected. Experiments involving bilateral adrenalectomy and transection of the spinal cord in dogs corroborated the impression that both vagal and extravagal mechanisms are activated by electroconvulsive treatment and can be depressed by appropriate medication.

Transcranial electric stimulation, when administered in electroconvulsive therapy, is a neurogenic stressor profoundly affecting the cardiovascular system. The most prominent circulatory responses so induced are disturbances in the initiation and conduction of the cardiac impulse and paroxysmal changes in the arterial pressure.

The understanding of these mechanisms is a matter of practical as well as theoretical interest, in view of the fact that acute circulatory disturbance is the most frequent cause of death in electroconvulsive therapy, whether it is given alone or in conjunction with such drugs as barbiturates and muscle relaxants. The death rate during and immediately after electroconvulsive therapy has been shown to be about 1 in every 1,065 patients treated [1]; in a study of 254 such deaths Impastato [2] found 40% to be of cardiovascular origin. He further showed that 27% of these fatalities were in 50-to-60-year-old patients. In the report of Maclay [3] on 62 deaths, 56% were in persons over 55 years of age.

These cardiovascular responses appear to be identical in man and in the dog. Therefore, animal in addition to human studies have been used in attempting to elucidate the underlying mechanisms.

Studies in Man

Electroconvulsive therapy (ECT) was administered in over 400 treatments. The ECT was modified by the intravenous use of barbiturates (thiopental or thiamylal sodium in most instances); succinylcholine (Anectine) chloride and artificial ventilation with 100% oxygen were given continuously during the period of apnea. Continuous electrocardiographic observations and frequent sphygmomanometric pressure determinations were made during each treatment.

Arrhythmias of varying degrees of severity occurred in the course of about 33% of the treatments. These arrhythmias were classified as vagal and extravagal. The vagal arrhythmias were characterized by marked slowing and occasional standstill of the heart. These were uniformly preventable by adequate atropinization. The extravagal arrhythmias consisted of frequent ventricular contractions, bigeminy and trigeminy, and, on a few occasions, runs of ventricular tachycardia. Various drugs, such as chlorpromazine and quinidine, were used to prevent the extravagal arrhythmias, but none of them was uniformly effective.

The treatment-induced pressor responses, manifested by a rise mainly in the systolic blood pressure, occurred in varying degrees in every patient. These were reduced to about one-half their usual magnitude by the prophylactic use of tetraethyl ammonium chloride. The use of phentolamine (Regitine) hydrochloride in patients with severe hypertension has been postulated, but such a patient has not yet been encountered by us.

Studies in Dogs

Transcranial electric stimulation was applied to dogs under comparable conditions, including continuous electrocardiography. Blood pressure, however, was recorded directly from a cannulated carotid artery with a Statham transducer and a Sanborn Polyviso.[4]

Read in the Symposium on Common Problems before the Joint Meeting of the Section on Anesthesiology and the Section on Nervous and Mental Diseases at the 108th Annual Meeting of the American Medical Association, Atlantic City, June 11, 1959.

Direct recording revealed a transient fall in blood pressure occurring immediately after electrostimulation. This fall, presumably too brief to be detected in the human measurements, was abolished by atropine or tetraethylammonium chloride (TEA). Atropine sulfate, in doses as small as 0.036 mg. per kilogram of body weight, completely prevented bradycardia and vasodepression after transcranial stimulation. Bilateral vagotomy was performed on several of the dogs and was found to be fully as effective as atropine in abolishing the bradycardia and hypotension.

TEA exerted a partial protection against the blood pressure rise, similar to that seen in humans; that is, there was a rise but it was not so great as that seen during the control stimulation. Larger doses of a more potent ganglionic blocking agent—hexamethonium chloride in doses of 10 mg. per kilogram of body weight—eliminated both the hypotensive and the hypertensive responses of the arterial pressure.

The use of such adrenergic blocking agents as phentolamine and phenoxybenzamine hydrochloride (Dibenzyline) partially blocked the pressor responses to transcranial stimulation. Weil-Malherbe and others [5] had suggested that the pressor response was due to an increase in circulating epinephrine and arterenol. Therefore, bilateral adrenalectomy was performed and this reduced the blood pressure rise to one-third of that obtained before adrenalectomy was performed. The residual hypertensive effect remaining after adrenalectomy would appear to be due to neurogenic mechanisms, i. e., caused by the release of neurohormones from sympathetic nerve endings directly at receptor sites in the heart and blood vessels.

In addition to blocking the sympathetic ganglions and preventing the liberation of sympathetic materials from the adrenal medulla, interruption of the sympathetic system in its course from the central nervous system to the periphery was performed by transecting the spinal cord above the level of sympathetic outflow. Cutting the spinal cord at C-6 abolished the hypertensive response without essentially affecting the initial blood pressure fall. If vagotomy was then performed on the dogs with transected cords, no change occurred in the arterial pressure.

Extravagal arrhythmias were encountered in 4 of 15 dogs and ranged in severity from an occasional premature ventricular contraction to brief periods of coupled premature beats and even short bouts of ventricular tachycardia. In three of the four animals exhibiting extravagal arrhythmias the severity and duration of the arrhythmia progressively decreased over the course of the first three stimulations (administered at 15-minute intervals) and were completely absent thereafter. A similar decrement in the hypertensive response on repeated stimulation was not observed.

Comment

The relatively high incidence of arrhythmias in our series of patients may be partly explained by the facts that the majority were over 40 years of age and that many of them had preexisting cardiac disease (one had Stokes-Adams syndrome; another had an aneurysm of the abdominal aorta). Many of these patients had been refused treatment elsewhere.

Our results are somewhat at variance with those of Egbert and co-workers,[6] who found that increasing the dose of thiopental from 100 to 500 mg. reduced the incidence of circulatory reactions stimulated by electroshock therapy. The average dose given to our patients was 400 mg., and still there was a high incidence of arrhythmia and a significant elevation of blood pressure in more than 60% of our patients.

The cardiovascular response to transcranial stimulation appears to be the result of a generalized peripheral discharge of both branches of the autonomic nervous system. The cholinergic effects, bradycardia, and hypotension predominate during the first phase of the response; then the second phase, characterized by hypertension and extravagal arrhythmias, demonstrates the excessive sympathetic activity. The effect of vagotomy and cord transection would appear to show that the origin of the response is in the brain centers, which, on activation by the electric stimulus, initiate trains of impulses which are conducted peripherally through the parasympathetic and the sympathetic nervous systems.

The lessening in severity of extravagal arrhythmias on repeated stimulation in three of the four animals in which this type of activity was noted deserves further investigation. Such a phenomenon is suggestive of the depletion of some substance necessary to the reaction. Whether this substance is epinephrine or epinephrine-like, it is not possible to say at this time. The fact that the pressor response to transcranial stimulation did not decline with repeated stimulation would imply that circulating epinephrine is not greatly depleted.

Summary

In both man and dog there are cardiovascular responses of varying degree to transcranial stimulation. These responses consist of two phases. The first is predominantly cholinergic, characterized by bradycardia and hypotension, which may be prevented by the administration of atropine or by vagotomy. The second phase, characterized by hypertension and extravagal arrhythmias, is predominantly adrenergic and may be ameliorated by the use of ganglionic and adrenergic blocking

agents, bilateral adrenalectomy, and transection of the spinal cord above the level of sympathetic outflow.

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USE OF ARTIFICIAL KIDNEY IN THE VERY YOUNG, THE VERY OLD, AND THE VERY SICK

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and
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Methods of protecting against alleged dangers associated with use of the twin-coil artificial kidney are described, and it is emphasized that reluctance of clinicians to use this therapy, which often may be lifesaving, is not justified. The wide range of usefulness is illustrated by case reports on application of artificial dialysis in a 16-month-old girl, a 77-year-old woman, and a seriously ill middle-aged man. In tangled diagnostic situations, dialysis should be done in the hope that the underlying problems may prove correctible.

Neither the age of a patient nor the severity of his disease need stand in the way of dialysis for the treatment of uremia if there is a chance for recovery or hope for prolongation of an enjoyable span of life. In the very young, when it is impossible to differentiate between poisoning, glomerulonephritis, endarteritis, or other conditions causing renal failure, treatment with the artificial kidney will gain time so that a definitive diagnosis can be made. In the very old, confusion, coma, depression, or dementia may not mean the unavoidable end but may prove to be a reversible state. This is likely if the patient was well just a few days prior to his illness. Cerebral symptoms need not contraindicate treatment with the artificial kidney if an increase in retention products, an imbalance of electrolytes, or the amount of edema indicates it.

A patient with severe infection, poisoning, or trauma may have oliguria and uremia and be comatose. It may be impossible to determine readily whether the coma is due to infection, poisoning, trauma, or uremia, but it will be possible to evaluate the uremia factor by eliminating it with dialysis. These seriously ill patients tend to have convulsions when they are very young and pulmonary edema and bronchopneumonia when they are very old. In both instances, ultrafiltration during dialysis may remove enough fluid to reduce the overhydration on which these complications are based.

Report of Cases

Case 1.—A 16-month-old girl was admitted to the Cleveland Clinic Hospital on the second day of complete anuria. She had been well until 12 days prior to admission, when she had coryza followed by profuse diarrhea for three days. She had no appetite and had vomited once. Her temperature was 102 F (38.9 C), and appendicitis was suspected. Ten milliliters of normal-colored urine was obtained over a 30-hour period.

On admission the child was restless, irritable, and crying. She was pale and her eyelids were slightly puffy. The blood urea level was 204 mg.

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per 100 ml.; blood pressure was 118/70 mm. Hg, and pulse rate was 156. Otherwise there was little abnormality, and the fundi were normal. Findings on a roentgenogram of the chest and retrograde pyelograms were normal.

The child was treated conservatively, remained completely anuric, and deteriorated clinically. The first dialysis was performed six days after the onset of anuria, when the blood urea level had increased to 374 mg., serum creatinine to 10.3 mg., and uric acid to 13.3 mg. per 100 ml. (fig. 1). The left greater saphenous vein was used as the inflow tract to the artificial kidney. The dialysis and ultrafiltration lasted three hours and 45 minutes; the child's weight was reduced by one pound. A transfusion of packed cells was given during the dialysis to correct the severe anemia (hemoglobin level, 3 Gm. per 100 ml.). Clinical improvement occurred. The catheter remained in the left saphenous vein for administration of 40% invert sugar. The child began to void small amounts of urine with a specific gravity of 1.021, a trace of albumin, many leukocytes, a few erythrocytes, and 4 or 5 granular casts.

Since the volume of urine did not increase sufficiently and vomiting began to recur, a second dialysis was done on the 12th day after the onset of anuria. A catheter was placed in the right saphenous vein, and dialysis was done by way of both saphenous veins for four and one-half hours. The blood urea level was reduced from 184 to 33 mg. and serum creatinine from 8.4 to 2.5 mg. per 100 ml. Ultrafiltration reduced the child's weight from 13,500 to 10,900 Gm. (29¾ to 24 lb.). After the second dialysis, when the patient began to take oral feedings, the catheters were removed. Daily urinary output increased gradually to 640 ml.; on the 30th day after the onset of anuria, the blood urea level had decreased to 33 mg. per 100 ml. The child was discharged on the 33rd day, and at examination one month later she was well and seemed to have recovered completely.

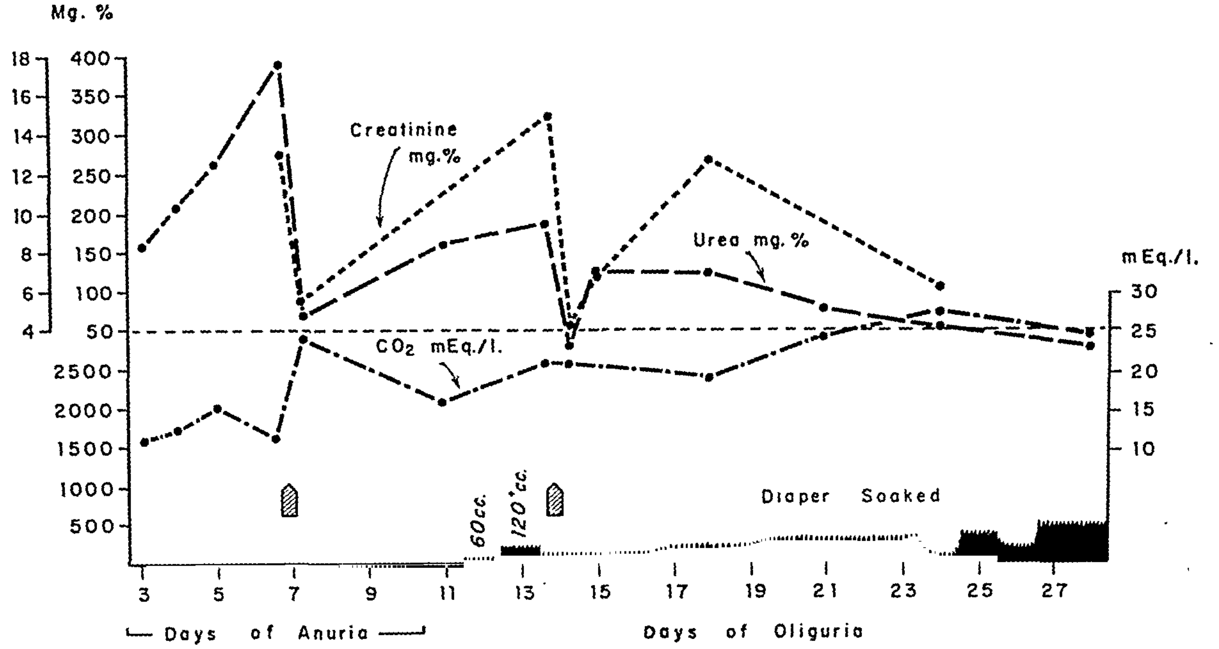

Fig. 1 (case 1).—Course in small child with renal failure of unknown cause and anuria for 11 days. Ultrafiltration was employed during both dialyses.

Case 2.—A 77-year-old woman was treated for lupus erythematosus for four and one-half years. Her disease was well controlled and she was in apparent good health until one week prior to admission, when she became anuric for two days, after which the volume of urine slowly increased. Three days prior to admission, chills, nausea, abdominal pain, and diarrhea developed.

On admission the patient was seriously ill; she was restless, confused, and nauseated and she vomited. She had abdominal pain that was not localized. A vesicular pustular eruption was spread over the face, trunk, and buttocks. The blood urea level was 195 mg.; serum sodium, 152 mg.; potassium, 6.4 mg.; serum chloride, 134 mg.; and hemoglobin, 14.8 Gm. per 100 ml. Carbon dioxide content was 8.6 mEq. per liter; cell volume, 44%; and leukocyte count, 6,700 per cubic millimeter, with normal differential. Although the hypernatremia and the hemoglobin content indicated dehydration, edema was present. The range of daily urinary output was 400 to 900 ml. Urinalysis revealed a specific gravity of 1.010, a trace of albumin, many erythrocytes, and 2 or 3 leukocytes. A roentgenogram of the chest showed evidence of left ventricular enlargement.

Attempts to improve the patient's condition with conservative treatment failed. The blood urea level increased to 300 mg., creatinine to 4.6 mg., and uric acid to 8.3 mg. per 100 ml.

On the 4th hospital day, the 10th day after the onset of oliguria, the patient's clinical condition became critical. Levarterenol (Levophed) and dextran were given intravenously in order to sustain the blood pressure until the artificial kidney was prepared. Dialysis was performed, and the clinical improvement was immediate and dramatic (fig. 2). On the 12th day the daily volume of urine increased to 1,500 ml. With steroid and antibiotic therapy the skin lesions faded and the patient became cheerful and happy, with a good appetite and a sense of well-being. She went home on the 18th day after the onset of oliguria; at the time of writing, six months later, she is reported to be doing well.

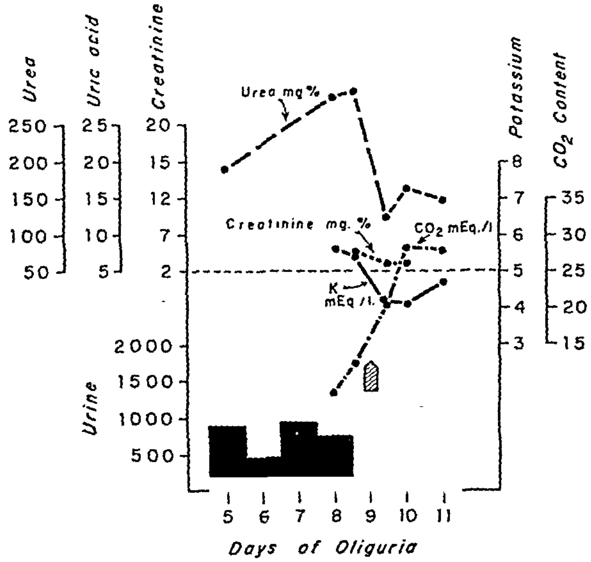

Fig. 2 (case 2).—Course in patient with lupus erythematosus with exacerbation and renal failure, showing results of dialysis.

CASE 3.—A 42-year-old man had a history of endocarditis with mitral stenosis and insufficiency, and some aortic insufficiency, but he had no previously known renal disease. Four weeks prior to his admission, influenza developed, with chills, fever, and neuralgia, which lasted 3 days and then recurred 10 days prior to admission. At that time, he had congestive heart failure and he was placed in an oxygen tent. He was treated with digitalis, cortisone, mercurial diuretics, and antibiotics without apparent success. Urinary output decreased to 300 ml. per day.

On admission to the Cleveland Clinic Hospital the patient was acutely ill, in congestive heart failure with pulmonary edema, in uremia, and semicomatose. Loud expiratory rhonchi and rales obscured the heart tones. We believed that he would not react to further administration of diuretics because the blood urea level was 294 mg. per 100 ml.; since he was in danger from heart failure and pulmonary edema, he was treated immediately with dialysis and ultrafiltration (fig. 3).

The serum potassium level, later reported to be 7.3 mEq. per liter, was in itself sufficient reason for immediate dialysis. Through ultrafiltration, his weight was reduced from 168 to 160 lb. (76.2 to 72.6 kg.). Within one and one-half hours, the signs of pulmonary edema had disappeared. Vigorous treatment with antibiotics and digitalis was started immediately. Three days later a second dialysis became necessary when the blood urea level had increased to 344 mg. per 100 ml. and clinical deterioration occurred, despite a urinary output of 1,850 ml. the previous day. Ultrafiltration was also employed during the second dialysis, and the weight was further decreased from 153 to 146 lb. (69.4 to 66.2 kg.). After this the patient gradually improved. He had a short acute depressive reaction from which he quickly recovered. He remembered nothing of any event during the previous three weeks. He left the hospital in good condition, and it was expected that he would soon be able to resume his occupation.

This man may have had subacute bacterial endocarditis superimposed on his preexisting rheumatic heart disease. Blood cultures remained sterile. The nature of the renal failure is not clear. Red blood cells and even microscopic hematuria were present, but otherwise the sediment showed little change. It is possible that emboli from the subacute bacterial endocarditis complicated whatever renal disturbance was present on the basis of heart failure. During the first week of his disease he was stuporous, disoriented, and sometimes restless, but there were no localizing symptoms. The cerebral dysfunction may have been due to a combination of prolonged anoxia caused by pulmonary edema and the uremia. It is unlikely that this man would have survived with conventional therapy alone. The turning point in his disease was brought about by the combination of ultrafiltration and dialysis.

Comment

Fear of alleged dangers of dialysis still prevents many clinicians from using the artificial kidney when it is indicated, especially when patients are very young or very old. We believe that the unfamiliarity with the present technique of using the artificial kidney is responsible for this unjustified fear. We will therefore consider what might be the alleged dangers or contraindications for the use of the artificial kidney in the very young, the very old, and the very sick. We will limit our consideration to the twin-coil kidney, which is now most widely used in the United States.[1]

Changes in blood volume of the artificial kidney could cause either shock or hypervolemia. This danger must and can be avoided. In small children, only one coil of the disposable twin-coil artificial kidney is used.[2] The priming blood is recirculated through the coil at an outflow pressure of 70 mm.

Hg. When the circulation of the child is switched in, without change in this outflow pressure, it may be assumed that there is no change in the blood volume of the artificial kidney and, therefore, that no change in the blood volume of the patient occurs. That this is true can be easily confirmed if the child is placed on a sensitive scale during the dialysis.

When the radial artery is small, as in the very young, or when there is hypotension, as in the very sick, it is best not to rely on the artery but, rather, to draw blood from a cannula in the saphenous vein which extends into the inferior vena cava. This cannula is brought out through a stab wound while the primary wound is closed. With due precaution the cannula may be used during the following days to administer a high-calorie (40% invert sugar or dextrose) solution to the patient; 10 mg. of heparin is added to each 500 ml. of fluid. The wound is covered with bacitracin ointment and a bandage. A safety curl on the leg is made so that the cannula cannot be pulled out.

The possibility of ultrafiltration has greatly expanded the usefulness of the artificial kidney. The problem of water balance is most important. Water of oxidation in itself may cause overhydration if there is a significant breakdown of the body tissues or if a high-calorie regimen is administered; thus, overhydration can occur even if the patient is given a minimal amount of water. Overhydration promotes the occurrence of hypertension, convulsions, and pulmonary edema. Therefore, ultrafiltration is combined with dialysis whenever a patient is overhydrated. Six hundred milliliters of ultrafiltrate may be removed per hour by adjusting a screw clamp on the outflow track which increases the back pressure in the artificial kidney.[3] Whereas decrease in pulmonary edema is obvious during dialysis, general clinical improvement should be evident on the following day. Sometimes it seems to be related to the removal of the excess fluid rather than to the removal of retention products.

In very old patients, sudden changes in blood pressure may easily provoke a stroke or coronary insufficiency. Changes in blood pressure during use of the twin-coil kidney nearly always can be avoided. If a rise in blood pressure occurs, temporary removal of a certain amount of blood from the patient's circulation is easily done, or one of the blood pressure–reducing drugs (e. g., pentolinium [Ansolysen], promazine [Sparine], or trimethaphan [Arfonad]) may be injected into the outflow line of the artificial kidney in small doses until the blood pressure is lowered. If a decrease in blood pressure occurs, a small (200 ml.) transfusion usually suffices to correct the blood pressure.

An electrocardiogram is constantly monitored on a Viso-Scope, and if, in the very sick, changes occur that are considered undesirable, the dialysis is temporarily discontinued. It is well to realize that the first hour of dialysis is by far the most important in terms of removal of retention products and correc-

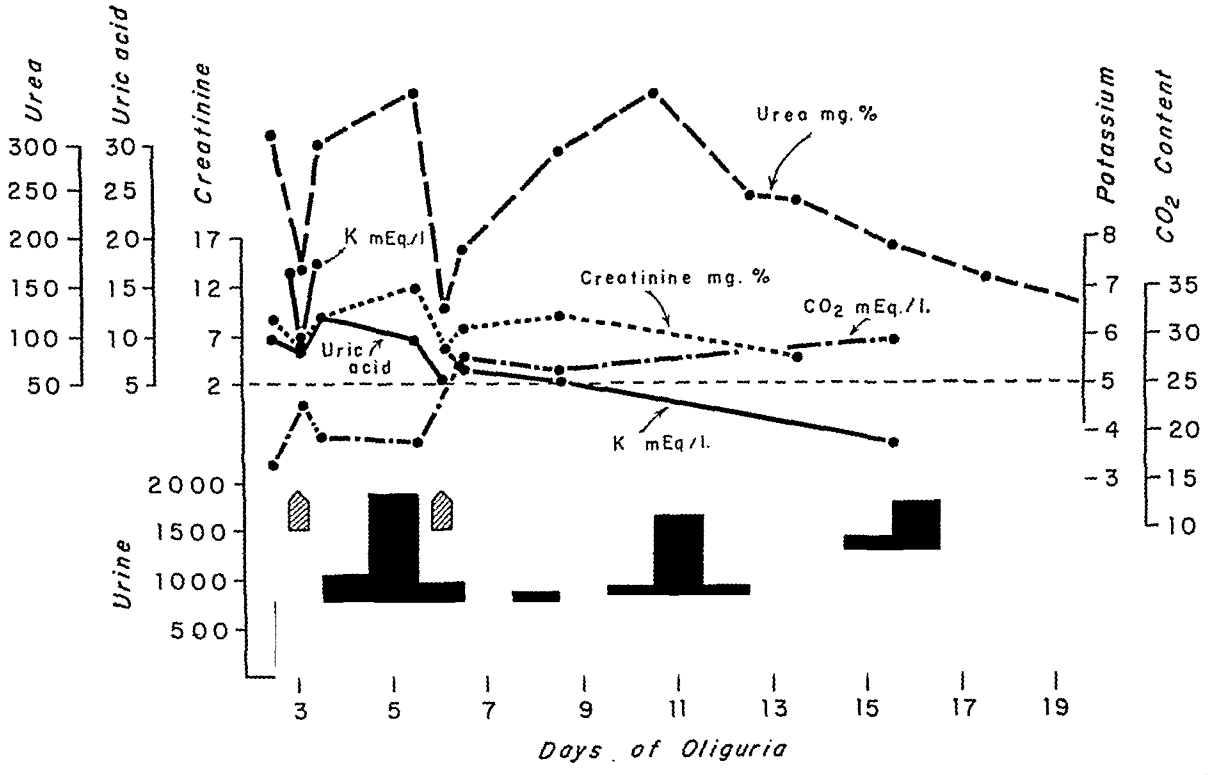

Fig. 3 (case 3).—Course in patient with congestive heart failure and pulmonary edema due to rheumatic heart disease. Development of primary renal failure made usual congestive failure therapy unsatisfactory. Ultrafiltration for removal of edema fluid was employed during both dialyses.

tion of electrolyte imbalance and that thereafter the effectiveness of dialysis decreases in proportion to the length of its duration. After three hours of effective dialysis, even what had been a dangerous degree of uremia will be sufficiently reduced to allow a pause of one or two days before another dialysis. Both arterial and venous cannulas may be left in the blood vessels; they are kept open by injections of 2 mg. of heparin in 2 ml. of saline solution every two hours in each cannula.

Large abrupt changes in electrolyte values, especially in the very old, may be expected to be followed by undesirable side-effects. Electrolyte changes should be made gently. For example, if the patient's serum sodium level is extremely low, we adjust the sodium concentration in the rinsing fluid of the artificial kidney to a level midway between that of the patient's serum and normal. A high potassium level is not drastically reduced all at once, otherwise arrhythmias or digitalis intoxication may appear.[4] A sudden dehydration may be followed by mental changes resembling catatonic psychosis.

The danger of hemorrhage is slight since we have learned to use regional heparinization. In our hospital about one-third of all dialyses are performed with regional heparinization. With this technique a constant infusion of heparin is administered into the inflow line of the artificial kidney and, at the same time, the appropriate amount of protamine sulfate is constantly administered into the inflow line to the patient.[5] This assures a prolonged clotting time of the blood in the machine and a normal clotting time of the blood in the patient.

For unknown reasons it is impossible to improve a low blood pressure by the usual means in some patients seriously ill with uremia, but after dialysis the blood pressure often becomes stabilized. Our 77-year-old patient (case 2) required continuous infusion of dextran and arterenol to maintain the blood pressure prior to connection to the artificial kidney. After the dialysis the administration of these drugs could be stopped.

Large amounts of blood or packed cells cannot be transferred in anuric patients. The risk of overloading the circulation and of causing pulmonary edema is too great. In the child (case 1), who had a hemoglobin content of only 3 Gm. per 100 ml. at the onset of dialysis, 400 ml. of blood could be transfused during the period of ultrafiltration. This safely improved the child's hemoglobin content, but without ultrafiltration such a transfusion might have led to convulsions. In the woman (case 2), 1,600 cc. of blood was administered during treatment with the artificial kidney. Thus, anemia can be adequately improved when ultrafiltration is employed to reduce the circulating blood volume. Exsanguino transfusion (replacement)[6] can be done after dialysis by utilizing the two cannulas already present. For each volume of blood or cells transfused, an equal volume is withdrawn. Sometimes, this is followed by a reduction of hypertension.

Early and frequent dialysis in patients with acute uremia can maintain clinical well-being, as was convincingly shown by O'Brien and associates,[7] who performed daily so-called prophylactic dialysis. We do not dialyze daily because this is not necessary with an effective dialyzer; we agree, however, that frequent dialyses, every two or three days, will maintain the patient's well-being.

Conclusions

In conclusion, we believe that the artificial kidney may be safely used in the very young, in the very old, and in other patients no matter how gravely ill, when it is skillfully handled. The advantages and the virtual certainty of clinical improvement whenever uremia or overhydration play a part in the clinical picture far outweigh the alleged dangers of dialysis. When the recoverability of a patient is questionable, he should be given the benefit of the doubt. Often, patients are admitted in dire states, the multiple problems together with uremia appear to be overwhelming, and some clinicians doubt the wisdom of pursuing intensive therapy. The "wait-and-see-er" loses precious time; delay lessens the effectiveness of ultimate dialysis. Finally, in tangled diagnostic situations, dialysis should be done in the hope that the underlying problems may prove to be correctible.

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The patients reported on were treated in collaboration with the following physicians from the Cleveland Clinic: case 1, Dr. Robert D. Mercer, department of pediatrics; case 2, Dr. John R. Hascrick, department of dermatology; and case 3, Drs. Leonard L. Lovshin and Ray A. Van Ommen, department of internal medicine.

The twin-coil kidney was manufactured and presented by Travenol, Baxter Laboratories, Morton Grove, Ill.

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EXPERIENCE WITH HALOTHANE (FLUOTHANE) IN MORE THAN FIVE THOUSAND CASES

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As a result of this extensive experience with a series of entirely unselected cases, it is concluded that halothane is a safe and predictable anesthetic when it is administered with equipment which permits accurate control of the vapor concentration and when concentrations are never allowed to exceed 2%. Special equipment and techniques believed necessary will be described in a subsequent paper. With such control, severe hypotension has ceased to be a problem, and there has been no evidence of hepatic, renal, or undue myocardial toxicity. Addition of a muscle relaxant was rarely necessary. There was remarkable absence of salivary and bronchial secretions. Further studies are being conducted to clarify the supposed dangers of using halothane in closed circuit.

Halothane (Fluothane) is a relatively new, potent, nonflammable, nonexplosive, volatile anesthetic agent which was introduced by Raventos[1] in May, 1956. It was made available to the American market in April, 1958. Its formula is 2-bromo-2-chloro-1,1,1-trifluoroethane, with the structural formula shown in figure 1.

Clinical Material and Methods

Halothane has been employed in more than 5,000 cases since November, 1956. During the first six months, 18% of the total anesthetizations done on our service were with halothane and oxygen. Since that time halothane has been used in over 40% of all anesthetizations. It has been employed by the attending staff and by the resident staff in the teaching hospitals of the University of Vermont, College of Medicine. A breakdown by type of case is given in the table.

In the first 100 cases conventional methods of administering volatile anesthetics were used, including "closed," "semiclosed," and "open" systems. The actual concentrations of halothane were, of course, unknown. In all subsequent cases not only were the concentrations of the agent accurately known but they were 2% or under. Except as noted, it is these cases, in which controlled concentrations were used, that are reported in this paper.

In adults an ordinary face mask was used on the conscious sedated patient, beginning with a 2% vapor concentration. With children, a "space helmet" was employed, or occasionally the delivery tube from the gas machine was held 2 or 3 in. away from the nose while the anesthetist talked to the child. When this technique was employed, 3% of the agent was delivered from the tube because of the dilution by admixture with air. When unconsciousness occurred, this technique was quickly changed to one employing a mask and bag, utilizing nonrebreathing valves.

Originally, the typical premedication employed for a young healthy adult was 75 mg. of meperidine with 0.4 mg. of scopolamine hydrobromide administered one and one-half hours preoperatively and 50-100 mg. of pentobarbital sodium given one hour preoperatively. During the last year this has been changed to a mixture of 40 mg. of alphaprodine (Nisentil) hydrochloride, 0.4 mg. of scopolamine hydrobromide, and 0.8 mg. of levallorphan (Lorfan) tartrate. Pediatric premedication has been with 24 mg. of alphaprodine hydrochloride, 2.5 mg. of levallorphan tartrate, and 0.15 mg. of scopolamine hydrobromide per 50 lb. (23 kg.) of body weight, administered intramuscularly 45 minutes preoperatively.

Atropine sulfate was not administered intravenously routinely before or during induction. It was given only in the presence of moderate bradycardia. The halothane was administered with oxygen alone, and intravenously given ultra-short-acting barbiturates or nitrous oxide were not employed in this series.

Results

Results were not good when halothane was administered in an inadequately controlled manner, as evidenced by the reported cardiac arrests, by moderate to severe hypotensive episodes, by arrhythmias, and by occasional respiratory acidosis from hypoventilation. When employed in the current, accurately controlled manner, the results have been very gratifying to both the anesthesia and the surgical staffs.

Mortality and Morbidity.—The following observations apply only to the cases in which this controlled manner was used and exclude the first 100 cases.

In the two-year period covered by the remainder of this series there were 23 deaths associated with surgery (occurring within 48 hours postoperatively). Seven of these patients had received halothane; of these seven, six had a physical status of grade 5 or

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From University of Vermont, College of Medicine.

7 (American Society of Anesthesiologists classification). All left the operating room in at least as good condition as when they entered. These patients died at periods ranging from 8 to 36 hours postoperatively, and there was agreement among the surgeons and the anesthetists that anesthesia played no part in the deaths. The remaining patient died in the operating room. This was a patient with a ruptured abdominal aortic aneurysm operated on with use of hypothermia. Asystole developed when the anastomosis was opened after four and one-half hours of aortic occlusion. The resuscitative attempts were unsuccessful. It was not felt that halothane had contributed to this death.

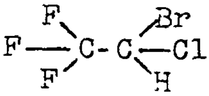

Fig. 1.—Structure of halothane (Fluothane).

No evidence of hepatotoxic or nephrotoxic effects was noted in this series, which, indeed, included patients with preoperative hepatic and kidney disease. Since adequate studies showing lack of toxic effects of halothane on the liver had been made by others, it was not felt necessary to repeat these.

Induction of Anesthesia.—Induction of anesthesia was extremely smooth. Patients accepted 2% halothane readily. There was a complete absence of nausea or vomiting on induction, minimal coughing or breath-holding, and complete absence of cyanosis. Only about 3% of the patients exhibited any appreciable excitation symptoms. The surgical anesthetic stage was attained in 10 to 15 minutes with 2% halothane, when used in the manner described above.

Maintenance.—A 2% concentration of halothane was adequate for the maintenance of abdominal relaxation in 80% of abdominal operations without the addition of a muscle relaxant. In neurosurgical cases, and in other cases where there were minimal painful stimuli, the average maintenance concentration for light surgical anesthesia after equilibration was 0.4 to 0.6%. For operations not requiring muscular relaxation, it was found that a concentration of from 0.4 to 1.25% was usually sufficient.

Emergence.—Emergence from anesthesia was in the vast majority of cases extremely rapid. In those cases where anesthesia had been maintained with a concentration of 1% or less, return to consciousness invariably occurred within a period of five minutes. In those cases which necessitated halothane concentrations of 2% for maintenance, emergence was somewhat delayed. Only rarely, however, was a patient unable to respond to his name by the time of transfer from the stretcher to the bed (average time about 15 minutes).

Cardiovascular Effects.—Three hundred seventeen cases were analyzed for blood pressure data. Figure 2 shows the maximum drops in systolic and diastolic pressures observed during the first hour of anesthesia. The fall in these pressures usually occurred at about one hour after induction. It can be noted in figure 3 that in less than 15% of cases was the fall in blood pressure at the end of an hour more than 20 mm. Hg. Blood pressure "drops" observed were less than those in adequately managed cases in which spinal anesthesia was used.

In about 100 cases electrocardiograms were monitored. Results with halothane were comparable to those seen with other anesthetic techniques. The incidence of pulse abnormalities, other than a definite tendency to bradycardia, was found to be no greater than with any other commonly used anesthetic agent. The moderate bradycardia observed was frequently associated with a hypotensive trend, and both almost always promptly reversed with the administration of atropine intravenously. Although epinephrine was used in over 75 local anesthetic infiltrations during halothane anesthesia, the incidence of arrhythmias was no greater in this group. Special attention was paid to these cases, since it has been said that the use of epinephrine with halothane is contraindicated.[2]

Although general surgical oozing and bleeding were thought to be diminished, it seemed to the hospital staff that halothane increased postpartum hemorrhage. This occurred in conjunction with the deeper planes of anesthesia obtained with halothane, as compared to nitrous oxide, which had been used previously in the delivery rooms. However, when halothane was employed, with patients kept in the same light planes of anesthesia produced by nitrous oxide, this tendency to increased bleeding was not present. The skin was warm, pink, and dry. Superficial veins were usually distended.

Breakdown of Cases in Which Halothane Was Used, by Type of Procedure

Type of Surgery	No. of Cases
Eye	198
ENT and Oral	
Tonsils and adenoids	1,612
Other	498
Orthopedic	213
Thoracic	
Pulmonary and esophageal	142
Cardiac	22
Neurological	
Craniotomy	52
Other	75
Obstetric and Gynecologic	
Cesarean section	7
Other	862
Urologic	130
General	1,318
	5,129

Respiratory Effects.—Ventilatory depression with this agent was observed to be proportional to the concentration used, as is well known to be the case with most anesthetic agents. With a concentration of 2% or less, little or no hypoventilation was noted. Intercostal paralysis or paresis was rarely seen. All patients breathed spontaneously except those with open chests or those in whom relaxants were used.

Measurements of tidal volume and rate in over 400 cases were made and the findings compared to the Radford nomogram.[2A] Ninety per cent showed less than a 10% deviation from the predicted value. In practically all the remaining cases the intravenous administration of levallorphan promptly reversed the respiratory depression. Measurements of end-expired pCO_2 were in line with the above tidal measurements. Results of 10 arterial pH determinations performed at random were also all within normal limits. Apnea and breath-holding were rarely encountered.

A definite tendency to tachypnea was found with this agent. It was noted that this was considerably reduced by the use of narcotics, even when given with a narcotic antagonist. Occasionally such administration of narcotic plus antagonist was used during the course of an operation to alleviate existing tachypnea. This was usually successful.

The compliance factor [2B] was determined in a group of thoracic surgery cases by changing from halothane to thiopental–nitrous oxide. It was easier to inflate these patients' lungs manually when halothane was used. Also, when a mechanical ventilator was used, less pressure frequently was required to attain a particular tidal exchange with halothane than was the case with thiopental–nitrous oxide.

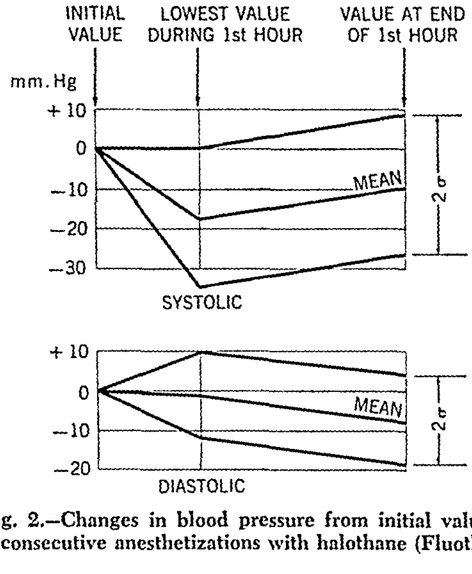

Fig. 2.—Changes in blood pressure from initial values in 317 consecutive anesthetizations with halothane (Fluothane).

Emphysematous and asthmatic patients seemed to be improved on inhalation of halothane, as manifested by decreasing rales and a shortening of the expiratory phase.

Reflexes.—With 2% halothane the laryngeal reflexes were sufficiently obtunded to allow easy intubation in more than 90% of the cases. With halothane anesthesia, use of muscle relaxants to facilitate intubation was necessary in only 5% of the patients. However, the time available for this maneuver was only about one-fourth that available when ether anesthesia was used. At times, when intubation was attempted on patients in unduly light levels of anesthesia, where movements of extremities were noted, the reaction to this intubation was extremely short and not intense, practically never resulting in cyanosis.

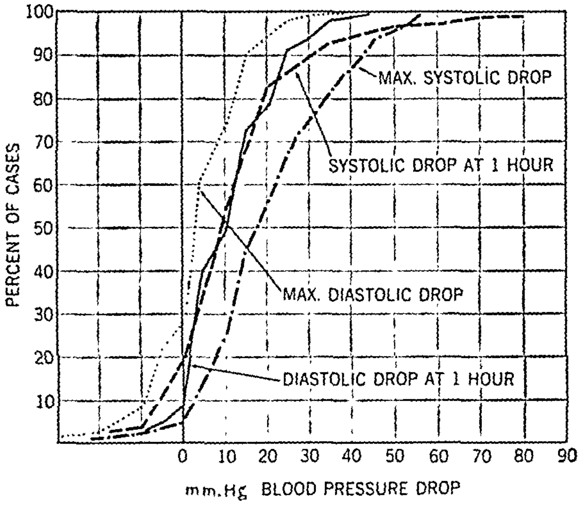

Fig. 3.—Percentage of patients whose blood pressure drop (from initial value) was less than value indicated along horizontal axis.

The oropharyngeal reflexes were obtunded in even lighter planes, occurring with the use of 1% halothane, so that oropharyngeal airways were easily inserted and tolerated. The ear, nose, and throat service frequently commented on the extreme quietude of the oropharyngeal reflexes when this agent was used. Oral surgery was usually satisfactory even when the level of anesthesia was such that patients could move their extremities.

Secretions.—The absence of salivary and bronchial secretions was remarkable. Patients were dry during induction, dry during maintenance, and dry on emergence, requiring far less tracheal suction than was customarily employed prior to the use of halothane. The few patients anesthetized without premedication were dry with respect to salivary and bronchial secretions. Our thoracic surgical service has commented on the fact that the need for postoperative "tracheal aspirations" has markedly diminished.

Nausea and Vomiting.—The incidence of postoperative nausea and vomiting in 500 cases selected at random was found to be about 2%. No vomiting was observed in 15 patients anesthetized with halothane after recent ingestion of food.

Relaxation.—In the 20% of patients undergoing abdominal surgery in whom muscle relaxants were required for adequate exposure, the amounts needed were about one-half of those usually employed with thiopental–nitrous oxide. Relaxants were not required in cases of open-chest surgery to obtain quiet operative conditions.

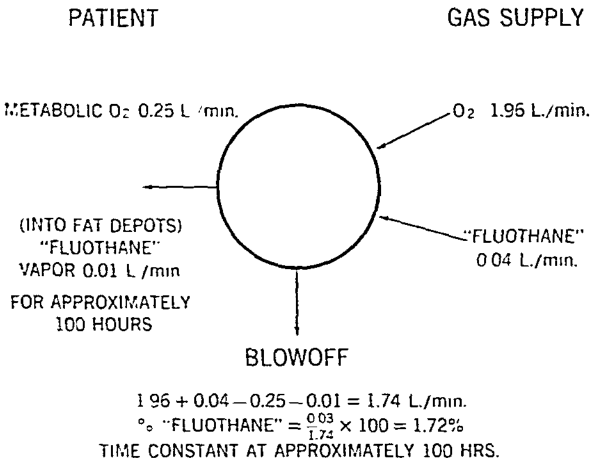
PATIENT
GAS SUPPLY
METABOLIC O2 0.25 L./min.
O2 1.96 L./min.
(INTO FAT DEPOTS)
"FLUOTHANE"
VAPOR 0.01 L./min
FOR APPROXIMATELY
100 HOURS
"FLUOTHANE"
0.04 L./min.
BLOWOFF
1.96 + 0.04 – 0.25 – 0.01 = 1.74 L./min.
% "FLUOTHANE" = 0.03/1.74 × 100 = 1.72%
TIME CONSTANT AT APPROXIMATELY 100 HRS.

Fig. 4.—Semiclosed system for administration of halothane (Fluothane).

Methods of Achieving and Maintaining Desired Levels

It was found that the usual clinical signs for estimating levels of anesthesia were frequently deceptive. Many times patients appeared adequately anesthetized but responded with movement when surgery began. Time and the concentration of the agent employed seemed to be a more reliable indication of level of anesthesia. For instance, 10 to 15 minutes of a 2% halothane concentration almost consistently produced second-plane, third-stage anesthesia. Signs of third-plane, third-stage anesthesia were observed in less than 2% of the patients, and these were usually debilitated. To produce first-plane anesthesia, concentrations of about 0.75% could be fairly well depended on.

It may be observed from the above comments that halothane employed in this manner has an absolute bottom such as one encounters when using incomplete agents such as nitrous oxide or ethylene. This last statement cannot be sufficiently emphasized. The semiclosed system with low flows with only oxygen as a diluent was the predominant technique employed in this study (figs. 4 and 5).

Comment

In more than 5,000 administrations of halothane, the hypotensive episodes observed to date have not seemed to be a liability. In the cases observed in this series, we have seen no mortality or morbidity associated with the hypotensive effects of this agent.

Moreover, the hypotension observed during open-chest surgery seemed to be of somewhat greater magnitude with halothane than with other agents. But it should be noted that mortality and morbidity do not appear to result under these circumstances. In our series no attempts were made to exclude patients with preexisting hypotension such as that found in shock and hemorrhage.

In order to deliver known concentrations of this agent, it is necessary to have special equipment and employ special techniques. A subsequent paper will deal with this aspect of the subject.

With high flows, use of this agent is expensive. It is possible, however, to use it with low flow rates, so that the cost is comparable, for example, to that of cyclopropane. This also will be discussed in a subsequent paper.

Halothane, when used in high and uncontrolled concentrations, can produce complete cardiorespiratory arrest in a matter of minutes, as was evidenced in the three instances which occurred during induction in our first 100 cases. Again, we want to emphasize that there is a definite need for precise knowledge of the exact concentration administered at all times. The apparent wisdom of this approach was pointed out many years ago by Snow[3] and recently by Waters.[4] We place this safe value at 2%. However, it is possible that we may, in the future, revise this upward if experience permits.

At present the employment of open-drop or closed systems with halothane seems to be fraught with great danger to the patient. Closed systems, as ordinarily used, may produce high concentrations with disastrous results.

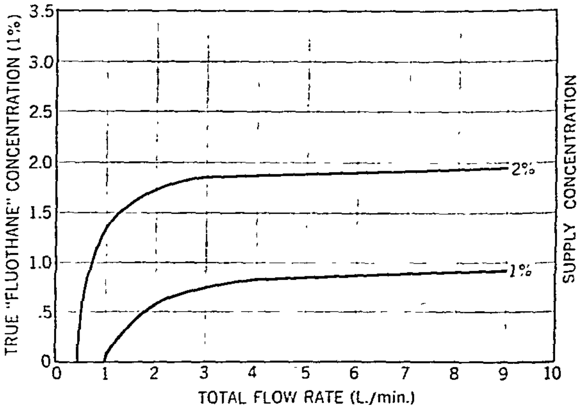

Fig. 5.—True halothane (Fluothane) concentration versus total flow in semiclosed system, with the patient absorbing 0.25 liter per minute of oxygen (metabolic) and 0.01 liter per minute of halothane (into fat depots) (time constant at about 100 hours).

However, recent data from Robson and co-workers[5] and Raventos and Duncan,[6] and corroborated by us with a few preliminary measurements made with an infrared spectrophotometer in an anesthetic system, seem to indicate a fairly constant uptake rate of about 10 cc. of halothane vapor per minute into the fat depots. This is not at all surprising when one considers the oil-water solubility ratio of this agent. The rate at which halothane is deposited in the body fat[5] seems to have a time constant of about 100 hours; that is, it takes about 100 hours for the concentration of halothane in the fat to attain ⅔ of its final value. If the above measurement can be definitely established, it is possible that in the future closed systems for maintenance can be safely employed.

In our present studies we are employing a 0-to-30-cc. oxygen flow meter. In order to deliver 10 cc. of halothane vapor from the kettle, one must flow about 20 cc. of oxygen through the kettle (depending on the ambient temperature). One now merely adds sufficient oxygen, in a bypass around the kettle, to make up the metabolic need for oxygen.

This technique, monitored with an infrared spectrophotometer, has been employed in 50 patients. The minimal changes in concentration seem to substantiate the validity of the above assumption. This would bring the cost of halothane to about 45 cents per hour. The undesirable results reported by Burnap and co-workers[7] are attributable to the use of closed systems in conventional ways. When halothane is employed in this manner, it is almost impossible to know the actual concentrations.

At present we use this agent whenever a general anesthetic agent is indicated, except when other agents are used for purposes of resident training. The use of a nonflammable and nonexplosive anesthetic agent with high oxygen concentrations, which permits utilization of cautery in the operating room, is a distinct advantage.

Hypotension associated with the use of this agent occurred in the operating room only, with practically no postanesthetic hypotension. This is in sharp contrast to the postanesthetic hypotension often associated with the use of cyclopropane.

There are many characteristics of this agent which resemble those of chloroform. However, there are two striking differences, namely, halothane is not hepatotoxic and emergence is more rapid.

Results of Other Workers.—Other workers have obtained results which differ from those obtained by us. Devine and co-workers[8] for example, have reported respiratory acidosis associated with hypoventilation when halothane is employed in reported concentrations of 1.5% or less. We feel this figure is incorrect and should be much greater.

The figure of 1.5% was derived from the assumption that the gas issuing from the kettle was 20% halothane. This does not agree with observations made by us. At 24 C, which is an average room temperature, we find the concentration of halothane issuing from the Morris copper kettle to be about 39%. This is consistent with the theoretical predicted value based on known vapor tension data and also with the fact that this model of copper kettle does, indeed, saturate the gas leaving it with halothane at the low 2-to-3-liter flow rates used. Thus, if the temperature had been 24 C, average room temperature, the figure of 1.5% should be revised to 2.93%.

To have obtained a 20% vapor from the kettle, the kettle temperature would have had to have been about 10 C. Such ambient temperatures in operating rooms are rarely encountered, even in Vermont.

The difference in our experience with respect to nausea and vomiting from that reported by Stephen an co-workers[9] (2% versus 4.7%) is due, we believe, to the fact that we employ only oxygen to vaporize halothane and not nitrous oxide, which, in itself, can account for considerable nausea and vomiting. The lesser degree of hypotension observed by us, we believe, can be attributed, in part, to the fact that preliminary administration of the ultrashort-acting barbiturates was not used by us.

Gain and Paletz[10] and Chang and co-workers[11] have reported large blood pressure drops. It may not be amiss to comment again that the above authors did not administer this agent with known controlled concentrations. Severinghaus and Cullen have succinctly summarized the influence of halothane on the myocardium with the statement, "It is likely that all volatile and gaseous anesthetics including Fluothane depress the myocardium equally when given in doses that depress the central nervous system equally. This implies a fundamental similarity in the mechanism of the depression of the two organs, perhaps related to lipid membrane behavior."

Summary and Conclusions

As a result of our experience with halothane (Fluothane) in more than 5,000 entirely unselected cases, we have come to regard it as a highly satisfactory anesthetic agent when administered with equipment which permits accurate control of the vapor concentrations.

It has been our experience that, when used in this fashion and when concentrations are never allowed to exceed 2%, halothane is a safe and predictable anesthetic. It permits smooth induction, early obtundation of pharyngeal and laryngeal reflexes, absence of salivary and bronchial secretions, adequate muscular relaxation for most surgical procedures, and an early return not only to consciousness but also to orientation as to person, time, and place.

In our hands, since accurately controlled administration has been employed, hypotension has ceased to be a problem and there has been no evidence of hepatic, renal, or myocardial toxicity. The use of halothane in closed circuit has been regarded as highly dangerous, and, although new evidence casts some doubt on the necessity for its proscription, further work will be necessary to clarify this picture.

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THE MEDICAL PROGRAM OF THE VETERANS ADMINISTRATION

George E. Armstrong, M.D., New York

The veteran population of the United States, numbering more than 22 million in 1958, presents formidable medical problems. Approximately 1,250,000 veterans were 65 or more years old at that time. There were 172 Veterans Administration hospitals in operation. The medical program of the VA has paralleled the general advances in American medicine, and the VA has maintained a position of leadership in the work of rehabilitation. A program of education and training begun in 1946 has been extended to 72 medical schools. A program of medical research has grown to include more than 6,000 projects in VA laboratories. Although the veteran population is expected to decline, the demand for medical services, especially in the geriatric and neuropsychiatric fields, must be expected to continue or even to increase for many years.

In 1950 the medical program of the Veterans Administration was described in The Journal as a report from the Special Medical Advisory Group under the editorship of Dr. Roy E. Kracke.[1] This publication dealt in considerable detail with the history and legal background of the department of medicine and surgery and summarized the events which led to the reorganization of the VA medical program in 1945. The present paper proposes to supplement the report of 1950 and to present some of the more recent developments in the programs under which medical care is now being provided for American veterans.

In presenting this report as a spokesman for the Special Medical Advisory Group, I am pleased to call attention to the tremendous contribution which American medicine has made, and continues to make, to the total VA program. In this cooperative effort there has been an ever-increasing degree of understanding between practicing physicians and VA staffs' general acceptance of mutual obligations toward veteran patients and, finally, a feeling of national pride in our democratic system which provides excellent medical care for the men and women who have earned their eligibility through service to the country.

Medical Responsibilities

The basic medical responsibilities of the Veterans Administration can be described and predicted with considerable accuracy in terms of the present veteran population, the distribution of ages, known trends in the occurrence of disease and disability, and certain other established factors. As of June 30, 1958, the total veteran population of the country was 22,727,000. Although the total number of veterans is expected to decline, the demand for hospitalization and medical service will continue, or even increase, in certain categories for many years. This forecast is based in part on the medical requirement of veterans aged 65 or older. About 265,000 veterans attained the age of 65 in the fiscal year 1958. Of all veterans in civil life June 30, 1958, approximately 1,250,000 were 65 or more years old. In 1960, nearly 1,800,000 and in 1965, about 2,300,000 veterans will be aged 65 or over. These trends have served to focus attention of the Veterans Administration on the problems and challenges of providing geriatric care.

Attention is particularly directed to the medical requirements of the large group of elderly veterans hospitalized for neoplastic and cardiovascular disease, for chronic respiratory conditions, and for long-term neurological and psychiatric disorders. Surveys show that the older veteran patient is affected to a greater extent by these and other chronic disabilities or similar conditions requiring longer periods of treatment and convalescence than the younger patient. Veterans hospitalized for long-term illness (hospital stay in excess of one year) account for almost half of the total VA hospital capacity. This "freezing" of beds requires the Veterans Administration to exert especial vigilance regarding factors controlling length of stay and turnover among hospital patients.

Outpatient Medical Care

Veterans are provided with medical and dental care for service-connected disabilities by VA outpatient clinics and by private physicians and dentists furnishing services on a fee basis. Under these programs, medical care is provided with greater economy to the government and convenience to the veteran than the costly alternative of hospitalization. More than 2 million outpatients received medical services from VA outpatient staffs or fee basis physicians during the fiscal year 1958. Hometown (fee basis) medical care is used if (1) the demand for service exceeds the capacity of the clinic, (2) the patient requires a specific type of treatment not available in the clinic, or (3) travel to the clinic creates an undue hardship for the patient. During the last fiscal year, 36,300 physicians and 12,500 dentists participated in the fee basis program. Also participating in the hometown program were retail pharmacies which supplemented VA pharmacies by filling 628,000 prescriptions for veterans. The hometown medical program also provides community home nursing care, especially to patients convalescing from long-term illness.

To improve the quality of medical care the Veterans Administration has adopted the policy of combining, where feasible, activities of outpatient clinics and hospitals in the same locality. Although such arrangements have generally resulted in significant economies, financial advantage has not been a dominant consideration. A total of 19 such consolidations have been effected since 1950.

During recent years, important changes in medical practice have produced a steady increase in the work load and cost of outpatient services. The use of tranquilizer drugs has made possible and desirable the treatment of many persons on an outpatient basis who would have previously required hospitalization. Successful use of antibiotic drugs in the treatment of tuberculosis has likewise shortened the duration of hospitalization and increased the need for outpatient service. To a lesser extent, advances in the management of hypertension and cardiovascular disease have had a similar effect. Medical and research staffs of the Veterans Administration have participated actively in bringing about these and other developments. There can be no doubt as to the professional, social, and economic benefits ultimately to be derived from such trends. They do, however, necessitate a flexible administrative approach which is willing and able to meet the changing situation with appropriate shifts in organization and facilities.

The Hospital Program

At the end of fiscal year 1958, there were 172 VA hospitals in operation. Most of these hospitals provided care to patients of all types. On the basis of the medical type of the majority of patients under care, there were 20 tuberculosis hospitals, 40 neuropsychiatric hospitals, and 112 general medical and surgical hospitals.

In response to a request from Mr. Sumner G. Whittier, administrator of veterans affairs, the President has recently issued a new and important policy in reference to the VA hospital program. Under this new policy the total authorized capacity of the Veterans Administration hospitals is fixed at 125,000 beds. All future construction to provide beds or hospitals for replacement and modernization, or to compensate for major geographical shifts in veteran population, will be within this over-all total. It is further provided that beds or hospitals, within the fixed total, can be shifted from one use to another or from one geographical situation to another in response to advances in medical treatment.

This new policy represents an important milestone in the development of the VA medical program. It provides the necessary flexibility to convert beds from one diagnostic category to another or to make changes consistent with local requirements without threatening the system as a whole. Under this policy the hospital program will be more predictable in many aspects. The improvement in administrative stability is well calculated to maintain or improve the quality of professional care. Furthermore, the policy will help to clarify the obligation of the Veterans Administration to provide hospitalization to veterans with non-service-connected disabilities. Under the law, the Veterans Administration provides hospitalization to veterans with non-service-connected injuries or illness if it is determined that the veteran is unable to pay for such care and if a bed is available. In the past, a great deal of controversy has been due to the lack of clearly authorized limits for the total VA hospital system on which the availability of beds could be defined. Under the new policy the availability of beds can be determined as the difference between the number required by veterans with service-connected conditions and the total capacity of 125,000 beds. First priority always goes to the veteran who seeks hospitalization for a service-connected condition.

As already mentioned, the VA hospital program is profoundly influenced by the demand for long-term hospitalization. The length of stay in the hospital is directly related to the age of the patient population and to the incidence of chronic or irreversible disabilities. It is estimated that the median length of stay of all patients admitted to VA hospitals is about 21.5 days. It is difficult to make any valid comparisons between VA hospitals and private hospitals in this respect, because of the great difference in the type of patient being served. More than one-third of all VA patients are hospitalized for periods in excess of five years, and more than one-half of the large group of neuropsychiatric patients remains in the hospital for five years or longer.

During the fiscal year 1958, the average daily patient load in all VA hospitals was 111,599. Fifty-one per cent of these were classified as psychiatric patients. The remaining patients were distributed as follows: tuberculous, 10%; general medical and surgical, 35%; and neurological, 4%.

An annual sample census provides detailed information on the clinical and eligibility status of patients under VA care on a typical day. The most recent report (Nov. 30, 1957) on 113,000 patients hospitalized under VA auspices showed that about 400, or 0.4%, were nonveterans for whose care the Veterans Administration received reimbursement. Included in this group were military personnel on active duty, federal government employees who were injured or disabled in the course of their employment, and persons requiring emergency hospitalization who were admitted as a humanitarian measure. The remaining patients were veterans who may be classified in three eligibility groups as follows: 1. There were 34.7% receiving care for service-connected disabilities. These veterans are unconditionally eligible for VA care. 2. There were 8.6% with service-connected compensable disabilities who were being treated for non-service-connected disabilities. These veterans are eligible for VA care if a bed is available. 3. There were 56.3% receiving care for non-service-connected disabilities. These veterans are eligible for VA care if a bed is available and they sign an affidavit certifying their inability to defray the cost of hospitalization.

During recent years, VA hospitals have been filled to an average occupancy rate of about 92% of operating beds. This is believed to be an efficient ratio but is probably about as high as should be attained. Some beds must always be kept open for scheduled admissions, transfers, and emergencies. Veterans with service-connected disabilities are invariably admitted within 24 hours of application. Others may have to be on waiting lists pending the availability of beds. At the close of fiscal year 1958, the number of eligible applicants awaiting VA hospitalization totaled 25,418. More than 60% of these were neuropsychiatric cases.

Domiciliary Care

Under the domiciliary program the Veterans Administration provides care to veterans who do not require actual hospitalization but who, affected by permanent or chronic disabilities, are unable to earn a living and are without financial resources for support. There are 17 domiciliary units with a total operating capacity slightly in excess of 17,000 beds. The medical problem among domiciliary members is of increasing concern and interest. Advancing age in the group has increased the incidence and severity of disease and disability. Developments in medical science, particularly in the field of total rehabilitation, have opened great new possibilities and obligations for adding to the comfort and productive life of these persons.

The VA Center at Wood, Wis., has made considerable progress in a pilot study of planned living programs for domiciliary members. This program provides scheduled activities for members based on their physical and mental abilities. Included in each activity plan are periods for treatment, work assignments, and recreation. The department of medicine and surgery recognizes the need for further research and development to provide all domiciliary units with the same quality of comprehensive medical care that is available to aged and chronically debilitated patients in VA hospitals.

Professional Service Activities

The large number of significant advances that have been introduced into the VA medical program since the report of 1950 have paralleled the general advance in American medicine. The VA professional services are broadly integrated with nongovernmental health services at both national and local community levels. This active exchange is a constant stimulus to professional growth and assures the veteran patient of a quality of medical care equivalent to the best available in the particular locality.

As recently as 1954, applications for admission to tuberculosis hospitals operated by the Veterans Administration far exceeded the number of available beds. Applied research in the chemotherapy of this disease has now materially reduced the demand for beds, shortened the duration of hospital stay, decreased the relapse rate, and reduced the death-discharge ratio.

The necessary bed adjustments for a declining load of tuberculous patients have been made to fully utilize the VA hospitals most favorably located, staffed, and constructed. A number of beds that were previously used for tuberculous patients have been converted for patients with nontuberculous diseases. The tuberculosis program is gradually being integrated with the internal medicine program, and pulmonary disease services are being established in selected hospitals.

Significant advances have been made in the attack on mental illness. Outstanding consultants in the fields of psychiatry, neurology, clinical psychology, nursing, and social work assist the VA staff in evaluating and developing the program of medical care for psychiatric and neurological patients. All leads relating to the cause and more effective treatment of mental disorders and neurological disease are under investigation. The Veterans Administration has made significant contributions to the medical world in evaluating the use of tranquilizing drugs in the treatment of mental illness.

The VA member-employee program has received nationwide commendation for its accomplishments. Under this program, long-term mental patients are selected to become salaried hospital employees as a step in the transition to normal work and social experiences they will encounter when discharged to their home communities.

On June 30, 1958, there were 8,049 psychiatric patients away from the hospital on trial visit, the majority of whom were under social work supervision. The number of such patients in special placements has continued to increase. Significant numbers of patients are being handled to good advantage away from hospitals in nursing and foster homes. The Day Care Clinic for psychiatric patients has recently been introduced on a limited pilot project basis and is demonstrating in VA, as it has elsewhere, an important contribution to productive and comfortable life for patients who do not require actual institutional care. VA mental hygiene clinics play an important role in averting hospitalization for many veterans.

Since World War II, the Veterans Administration has maintained a position of leadership in medical rehabilitation which has been of outstanding importance to its patients and has been followed with interest by the medical profession throughout the world. New and important techniques have been developed with particular application to psychiatric patients, blinded patients, paraplegic and quadriplegic patients, and the older long-term patients with chronic disabilities. The newer techniques are aimed at preventing further physical and mental deterioration, helping to maintain or improve mobility, and contributing to happier living. The approach is designed to help meet a growing major health problem that confronts the entire nation as well as the Veterans Administration.

It would be impractical to attempt a full listing of contributions and advances made by VA professional services during recent years. The foregoing report may serve to illustrate the type of effort that is being made in a large number of medical and paramedical service units throughout the VA system.

Education and Training Program

In 1946, a program of education and training was instituted to overcome professional deficiencies and to improve the standards of patient care. An association with the nation's medical schools began at once and through the years has extended to 93 hospitals and 72 medical schools. This program has brought to the medical care of veteran patients not only the experience and teaching ability of the faculties of the medical schools but also the eagerness, vigor, and scientific curiosity of young medical trainees. Simultaneously, the VA hospitals were developing affiliate programs with universities and colleges for trainees in nursing, dietetics, social work, psychology, occupational therapy, and other professions in the field of medical care. One of the most important factors determining the success of the VA medical program is its close integration with American medicine and related professional groups through universities and medical schools. The status and achievement of this relationship has been the subject of a recent publication.[2]

The Veterans Administration now operates 626 training programs for resident physicians and 25 graduate training programs in dentistry. The total of 2,515 VA medical residents on duty as of April 15, 1958, represented 82% of all residency appointments in the federal service and 11% of all residency appointments in the United States. In the fields of nursing, hospital administration, and the paramedical specialties, there are about 5,000 trainees each year. The coexistence of these training programs with a medical residency program produces a hospital and clinic environment beneficial to both. While providing an essential service to veterans, these programs also make a tremendous contribution to the trained medical manpower pool of the nation, especially in those areas where such manpower is in critically short supply.

The Veterans Administration is also making a valuable contribution to undergraduate medical and dental education through the sponsorship of clinical clerkships in selected hospitals. For the academic year 1957-1958, a total of 6,022 medical students representing 62 medical schools were assigned to VA hospitals.

Approximately half of the VA hospitals are located in, or near, medical centers where they benefit from the daily associations and the general stimulus of an academic atmosphere. The other hospitals, which are peripherally located, require certain special efforts to secure comparable levels of continuing education and professional growth. In addition to the more conventional form of clinical lectures and educational duty details, a program of Physician-in-Residence has been developed for the benefit of these hospitals. Under this program highly qualified clinical teachers are scheduled for visits of three to five days at each of the hospitals. These visitors spend their entire time in intimate contact with the VA staff and develop an informal, but intensive, teaching exercise around the actual professional problems of the hospital. The physician-in-residence visit has been highly successful as both a practical and an academic stimulus and in many instances appears to be a more effective method of postgraduate education than the traditional approaches.

The VA Clinical Investigator program was inaugurated in 1957 to meet the needs for selected physicians whose primary responsibility is medical research. This program has been strongly supported by the medical schools of the nation. There are 38 clinical investigators on duty during the current year. The three-year training assignment afforded under this program is designed to produce physicians who have, in addition to their fundamental medical training, the skills and interests necessary for continued advancement in clinical research and teaching.

Research Program

Major health problems of the veteran population furnish the stimuli for the VA medical research program. This program not only provides the necessary solutions to the day-to-day problems of medical care but is of benefit to the nation and its nonveteran citizens as well. In addition, many medical specialists have been attracted by the opportunities for research and have joined the staffs of VA hospitals for this reason. This has brought a high order of medical talent to the patient's bedside.

During the current year, more than 6,000 projects are being pursued in VA research laboratories. A large proportion of these are directed toward problems of aging and the chronic long-term disabilities which are of major concern to all medical service elements.

Aside from the research projects conducted in individual VA hospitals, the department of medicine and surgery has developed a method of "cooperative study" whereby a number of VA hospitals, often in collaboration with other governmental agencies and nongovernmental groups, bring together their combined facilities and focus the talents of many experienced investigators on a given problem.

One of the more spectacular achievements of group cooperative research was the development of a successful plan for the treatment of tuberculosis by chemotherapy. The plan has revolutionized the management of patients with tuberculosis, has shortened their period of hospitalization, and has materially reduced the morbidity and mortality due to this disease.

Cooperative study programs of similar type are now being conducted in 24 major clinical problems. Among these are cancer chemotherapy, chemotherapy in psychiatry, pulmonary function studies, antihypertensive agents, antibiotic resistance of staphylococci, surgery of coronary heart disease, and so on.

Summary

This brief account of the medical program of the Veterans Administration supplements the "Kracke report" of 1950 and presents some of the more recent developments in veterans' medical care. Basic responsibilities of the VA medical service are determined in terms of the known veteran population, with special attention to problems of aging and chronic long-term disabilities.

Current trends in medical practice are increasing the need for care in VA outpatient clinics supplemented by fee basis service of private physicians and dentists. The VA hospital program has been stabilized by a new administrative policy fixing the total capacity of the system at 125,000 beds. The domiciliary program is being strengthened by greater medical interest in the health and total rehabilitation problems of the member population.

The large number of improvements in the professional services of the VA program parallel the general advance in American medicine. Education and training programs in cooperation with universities and medical schools have been of vital importance in achieving the present high standards of patient care. The research program has made valuable contributions to patient care, has been an important factor in recruitment of specialized personnel, and has established itself as a highly significant unit among the health service resources of the nation.

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ATYPICAL FACE PAIN

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An attempt was made to classify 100 patients who complained of deep, poorly localized, and vaguely described facial pain but whose symptoms could not be ascribed to trigeminal neuralgia, glossopharyngeal neuralgia, postherpetic neuralgia, or obvious disease of the teeth, throat, nose, sinuses, eyes, or ears. In 53 cases the trouble was finally ascribed to psychiatric illness such as depression, hysteria, or schizophrenia. In 33 cases it was possible to identify either organic causes such as tumors or physiological disturbances such as abnormal vasodilator activity. In 14 patients neither psychiatric nor physical causes were identified and the etiology remained undetermined. Such patients should be treated conservatively, since ill-advised operations can result in grief for both patient and surgeon.

We have chosen the term "atypical face pain" to refer to an ill-defined group of conditions known by such names as "atypical facial neuralgia," "ciliary neuralgia," "facial causalgia," "sympatheticalgia," "sphenopalatine neuralgia," and "vidian neuralgia."

A succinct definition of atypical face pain is not possible, but the term must be delimited to some degree if it is to be used intelligently. In attempting this, we can best start by stating what the term *does not include. Atypical face pain does not refer* to trigeminal neuralgia, glossopharyngeal neuralgia, postherpetic neuralgia, or pains caused by obvious disease of the teeth, throat, nose, sinuses, eyes, or ears. This leaves, then, a group of conditions characterized by pain that is "deep," poorly localized, and vaguely described by the patient. The pain may be felt in regions supplied by the fifth and ninth cranial nerves and the second and third cervical nerves. The distribution of the pain is "unanatomic," in that it may involve portions of the sensory supply of two or more of these nerves and may cross the midline. In general, this pain is constant and endures for long periods, that is, weeks to years. Trigger zones are lacking. Patients often describe the pain as boring, drawing, pressing, pulling, burning, or aching.

With such a poor attempt at definition, how can we justify a presentation of this subject? "Atypical face pain" is a term like "fever" or "convulsion." It names a symptom but does not imply a definite origin or cause. Given a case of atypical face pain, what are the possibilities as far as diagnosis, etiology, and treatment are concerned?

In an attempt to answer some of these questions, we studied 100 patients initially given a diagnosis of atypical face pain who were seen by one or more of us at the Mayo Clinic in a period of 18 months. It was found possible to classify the condition in each of these 100 patients under one of three headings, namely, (1) psychogenic, (2) organic, and (3) indeterminate. This classification was not made on the basis of any preconceived notions concerning etiological factors or pathological changes. The rationale for such a classification may become clear as each of the headings is described and discussed.

Patients with Psychogenic Face Pain

The group with psychogenic face pain consisted of 53 patients who suffered from depressive reactions, conversion hysteria, or schizophrenia. Each of them complained primarily of face pain. Other symptoms suggestive of psychiatric illness were elicited after some time had been spent in talking to these patients.

The age at onset of the pain in the 46 women and 7 men varied from 12 to 70 years, the majority of patients being in the fourth and fifth decades of life. The duration of pain varied from 1 to 36 years. Only eight patients had enjoyed any remission of pain; three of these could give no reason for remission, one had pain only with her menstrual periods, and the remaining four had noted temporary relief after minor surgical procedures on the nose, sinuses, or teeth. The other patients in the group suffered from constant pain. None was addicted to the use of opiates. Sixteen of these patients could obtain partial relief from the use of mild analgesics or sedatives, but in each instance the relief was so unsatisfactory that none had become habituated to the drug giving this partial relief.

A total of 33 patients were unable to recognize any cause for their pain. The presumed causes offered by the remaining 20 patients were as fol-

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Organically Caused Face Pain

In the second group of patients the pain apparently resulted from an actual morbid anatomic change, such as neoplasm, or from obviously disturbed physiological function, as in the case of vasodilating face pain. This group included 33 patients (14 men and 19 women). These patients could be subdivided into five groups, namely, those with (1) vasodilating face pain, (2) dental disease, (3) neuritis, (4) neoplasms, and (5) miscellaneous conditions.

Vasodilating Face Pain.—Seven men and one woman had pain thought to be the result of dilatation of arteries of the face. This pain closely resembled histaminic cephalalgia, or "cluster" headache, in character, onset, and duration, but the location was sufficiently unusual to cause some difficulty in recognition. The maximal pain was in the lower portion of the face, which contrasts to the location in the usual case of histaminic cephalalgia. The attacks were relatively brief (20 minutes to 3 hours) and usually occurred several times in 24 hours. Repeated bouts of pain would trouble the patient for days or weeks at a time and then subside, to leave him free of pain for several weeks or a year. In each case, a trial injection of ergotamine tartrate relieved the pain of a typical attack.

Six of these patients came to the clinic with a diagnosis of trigeminal neuralgia. Various surgical operations had been performed on six patients to relieve the pain. These operations included extraction of teeth, operations on the nose and paranasal sinuses, injection of alcohol into or avulsion of branches of the trigeminal nerve, and decompression of the gasserian ganglion and posterior root of the trigeminal nerve. One patient had the dubious distinction of having undergone 10 separate surgical operations on his face; each was done for the purpose of relieving his pain, and each was a doleful failure.

Dental Disease.—The face pain proved to be caused by previously unrecognized dental disease in eight patients (one man and seven women). In each instance, the pain was unusual and objective evidence for dental disease was lacking during the early part of the illness. The pain was described as a constant ache in the face but not the teeth by four patients and as a severe but intermittent ache by four patients. Two patients noted that hot or cold foods or liquids would increase the pain. Spontaneous remissions of pain were noted by six of the patients. Seven of them experienced some relief with the use of ordinary analgesics.

In general, the pain was poorly localized; in no case was it localized to the offending tooth until late in the course of the illness. Physical examinations and roentgenologic studies early in the illness gave normal results. In five patients, the final diagnosis was pulpitis, and the pain was relieved by extraction of the tooth. Three patients had causalgia of the mandibular nerve after dental extraction. All efforts failed to relieve the pain.

Neuritis.—Neuritis of some portion of the trigeminal nerve was thought to be the source of pain in eight patients (four men and four women). The age at onset varied from 24 to 73 years, and the duration of the complaint varied from two months to three years. The presumed causes for the neuritis were trauma to the face in three patients, extraction of teeth in two, and insect bite on the forehead in one; no cause for the pain could be recalled by the remaining two patients. The pain was described as burning and itching, jabbing or sticking. In each instance, it was limited to the branch of the nerve that was presumed to have been injured, and each patient had a slight but definite loss of sensation in this region.

Neoplasms.—Three patients had neoplasms that caused unusual pain. Two women had suffered from face pain for five and six years, respectively, before other evidence of a tumor became apparent; each had a cylindroma, one in the parotid gland and one in the antrum. In each patient, careful and repeated examinations had failed to disclose any abnormality until late in the course of the illness. One woman had been emotionally maladjusted all her life, and her pain was considered as psychogenic for several years. In each of these two patients, the pain was deep, shooting, and boring but poorly localized. It was present constantly but varied unpredictably in severity.

The third patient with a tumor was a man who had noted a variety of aching, jabbing, and burning pains on one side of the face for a year, during which time no cause for his distress could be discovered. This pain did not resemble trigeminal neuralgia. After a year, he became aware of numbness on the painful side of his face, and diminished sensation was found on testing with a pin and cotton. A neurofibroma of the acoustic nerve was recognized and removed.

Miscellaneous Conditions.—The remaining six patients of the group with organically caused pain had a variety of conditions. The pain in each instance was unusual, as a manifestation of the presumed cause or the cause was not readily apparent. A young woman with acromegaly had pain in the right side of the face for 16 months; her discomfort resembled trigeminal neuralgia in some ways but was not typical of that condition. Sensa-

tion on the affected side of the face was diminished. Section of the sensory root of the trigeminal nerve relieved the severe stabbing pain but left her with a constant burning discomfort on the right side of the face. Two women had thyroiditis associated with severe aching in the ear, lower jaw, and neck. A woman suffered from sudden severe pain in the right eye only, with diminution but not complete loss of vision in that eye; when examined three weeks later, she was found to have temporal arteritis.

A woman had a stroke, with hemiplegia on the right and pain over the entire right side of the body. Within a few months, the pain disappeared except for "soreness" and burning of the gums, tongue, and malar region on the right side. At the time she was last seen at the clinic, this had persisted for two years. This pain was assumed to have been the result of a thalamic lesion. A 68-year-old man had suffered from symptoms of tabes dorsalis for 22 years when seen at the clinic. One year before registration, he had noted dull, steady, aching pain on both sides of the face. This was associated with bilateral subjective diminution of the sensations of touch and pain over the distribution of the trigeminal nerve.

Face Pain of Indeterminate Etiology

Patients were classed as having face pain of indeterminate etiology (five men and nine women) largely because they failed to qualify for the other two groups. In more than half of these 14 patients, the onset of pain was after the age of 50 years. The duration of pain was relatively short as compared with that in the group with psychogenic pain. The presumed causes for the pain as given by six patients included infections, injuries, and operations about the face. The remaining eight patients could not recognize any cause for the pain. In general, the pain experienced by these patients had the following characteristics: It was of shorter duration and came on later in life than was true in the other two groups. Remissions were common. The pain was made worse by maneuvers that often make "organic" pain worse, such as chewing, rubbing the face, or jarring the head. Most of these patients could gain temporary but substantial relief from ordinary analgesics. There was no reliable evidence to indicate that the pain was psychogenic, and the character of the pain suggested an organic cause.

Comment

When a physician sees a patient who complains of face pain that is atypical, what steps can he take in an attempt to solve the problem? The first and most important step is to obtain a careful and detailed history. The patient should be asked to recall his first experience with the pain and recount its exact location and character at the onset. If he has any ideas as to the cause, these should be considered, no matter how odd they may appear to be. The subsequent course of the pain should be ascertained to learn whether it was constant or intermittent. If remissions occurred, what were their frequency and duration? What seemed to bring about these remissions? When the pain was present, what would make it worse and what would relieve it? Has the pain remained constant in location and character or has it changed? What types of treatment have been employed and what were the results? What diagnoses have been made in the past? If the patient's answers to such questions are vague or evasive, this observation itself may be of value in forming some opinion as to the nature of the illness.

A careful physical examination should be done, since it may reveal some condition, such as thyroiditis, that will account for the pain. It is often necessary to carry out dental or neurological studies, as well as examinations of the eyes, ears, nose, throat, and sinuses. Roentgenograms of the skull, sinuses, teeth, cervical portion of the spinal column, and temporomandibular joints may be required. In some cases, special roentgenologic studies, such as tomography, are of value. Other laboratory tests are usually of little value, but none should be neglected if it offers a reasonable chance of shedding light on the problem. Biopsy of any suspicious mass or region is justified.

Procedures intended to relieve pain may be of value provided they can be carried out with safety. Injection of a local anesthetic agent into the painful region or into a nerve supplying that region is of value when practical. The results of a single treatment should not be relied on, particularly when the one injection relieves the pain. In some cases, the injection should be repeated, with sterile water used to test the suggestibility of the patient. Application of a solution of cocaine to painful regions in the throat or nose may relieve the pain. If relief is obtained, the procedure may be repeated, with a solution of quinine used as a control. If the pain has characteristics suggesting that it is the result of vasodilatation, it is well to try the effect of injection of histamine to induce or augment the pain or the injection of ergotamine tartrate to relieve it.

Finally, if the patient displays evidence of significant emotional disorder, psychiatric consultation is of value. As a result of such study, it may become apparent that the pain is the primary symptom of depression or a similar major psychiatric problem. The patient's emotional state occasionally is such that it causes him to exaggerate an "organic" pain which he otherwise might bear with good grace. In such cases, proper psychiatric care may so lessen the significance of the pain that it no longer presents a problem.

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Six of these patients came to the clinic with a diagnosis of trigeminal neuralgia. Various surgical operations had been performed on six patients to relieve the pain. These operations included extraction of teeth, operations on the nose and paranasal sinuses, injection of alcohol into or avulsion of branches of the trigeminal nerve, and decompression of the gasserian ganglion and posterior root of the trigeminal nerve. One patient had the dubious distinction of having undergone 10 separate surgical operations on his face; each was done for the purpose of relieving his pain, and each was a doleful failure.

Dental Disease.—The face pain proved to be caused by previously unrecognized dental disease in eight patients (one man and seven women). In each instance, the pain was unusual and objective evidence for dental disease was lacking during the early part of the illness. The pain was described as a constant ache in the face but not the teeth by four patients and as a severe but intermittent ache by four patients. Two patients noted that hot or cold foods or liquids would increase the pain. Spontaneous remissions of pain were noted by six of the patients. Seven of them experienced some relief with the use of ordinary analgesics.

In general, the pain was poorly localized; in no case was it localized to the offending tooth until late in the course of the illness. Physical examinations and roentgenologic studies early in the illness gave normal results. In five patients, the final diagnosis was pulpitis, and the pain was relieved by extraction of the tooth. Three patients had causalgia of the mandibular nerve after dental extraction. All efforts failed to relieve the pain.

Neuritis.—Neuritis of some portion of the trigeminal nerve was thought to be the source of pain in eight patients (four men and four women). The age at onset varied from 24 to 73 years, and the duration of the complaint varied from two months to three years. The presumed causes for the neuritis were trauma to the face in three patients, extraction of teeth in two, and insect bite on the forehead in one; no cause for the pain could be recalled by the remaining two patients. The pain was described as burning and itching, jabbing or sticking. In each instance, it was limited to the branch of the nerve that was presumed to have been injured, and each patient had a slight but definite loss of sensation in this region.

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The third patient with a tumor was a man who had noted a variety of aching, jabbing, and burning pains on one side of the face for a year, during which time no cause for his distress could be discovered. This pain did not resemble trigeminal neuralgia. After a year, he became aware of numbness on the painful side of his face, and diminished sensation was found on testing with a pin and cotton. A neurofibroma of the acoustic nerve was recognized and removed.

Miscellaneous Conditions.—The remaining six patients of the group with organically caused pain had a variety of conditions. The pain in each instance was unusual, as a manifestation of the presumed cause or the cause was not readily apparent. A young woman with acromegaly had pain in the right side of the face for 16 months; her discomfort resembled trigeminal neuralgia in some ways but was not typical of that condition. Sensa-

tion on the affected side of the face was diminished. Section of the sensory root of the trigeminal nerve relieved the severe stabbing pain but left her with a constant burning discomfort on the right side of the face. Two women had thyroiditis associated with severe aching in the ear, lower jaw, and neck. A woman suffered from sudden severe pain in the right eye only, with diminution but not complete loss of vision in that eye; when examined three weeks later, she was found to have temporal arteritis.

A woman had a stroke, with hemiplegia on the right and pain over the entire right side of the body. Within a few months, the pain disappeared except for "soreness" and burning of the gums, tongue, and malar region on the right side. At the time she was last seen at the clinic, this had persisted for two years. This pain was assumed to have been the result of a thalamic lesion. A 68-year-old man had suffered from symptoms of tabes dorsalis for 22 years when seen at the clinic. One year before registration, he had noted dull, steady, aching pain on both sides of the face. This was associated with bilateral subjective diminution of the sensations of touch and pain over the distribution of the trigeminal nerve.

Face Pain of Indeterminate Etiology

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Comment

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lows: dental operations, 11 patients; being struck in the face by husband, 3 patients; husband's illness, "nervous breakdown," nasal operation, parotitis, infected ear, and operation on the trigeminal nerve, one each. In general, we are reluctant to use the term "psychogenic" to classify cases of face pain. In spite of this, we think its use is justified because of the unusual character of the pain, its unanatomic distribution, the prominence of symptoms indicating emotional illness, and the lack of any signs of organic derangement.

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poorly defined and loosely organized group to which the term "atypical face pain" may be applied without implying that the term describes a well-defined entity. Danger exists in considering it an entity, since this would imply a common cause and its use would assume that a definite diagnosis had been made. The term should be used only as a last resort and only after careful and exhaustive efforts have been made to arrive at a better diagnosis.

When it is finally decided that a patient has atypical face pain for which no cause can be found, treatment should be of a conservative nature. Surgical operations about the face and head should be done only if it is reasonably assured that the procedure will relieve the pain, for ill-advised operations can result in grief for both patient and surgeon.

Summary

The term "atypical face pain" should be used as the name of a symptom in the same manner in which such terms as "fever" and "convulsion" are used. These pains do not have a common cause. The designation should be used only when a definite diagnosis is not possible and with the realization that surgical treatment holds little promise of aiding these patients. Cautious conservative treatment and continued observation are the best means for care of these patients.

CLINICAL NOTES

ALLERGIC REACTION TO SUCCINYLCHOLINE

Edith R. Kepes, M.D.
and
Henry Haimovici, M.D., New York

Succinylcholine (Anectine) chloride is a "depolarizing" type of muscle relaxant with action of rapid onset and short duration. It was synthesized in 1906 by Hunt and Taveau[1]; its effect on the neuromuscular junction was first described by Bovet and others[2] in 1949. Since 1950 succinylcholine has had extensive clinical trial and has been administered to thousands of patients to produce muscular relaxation for surgery. Because of its controllability and lack of side-effects, this drug has almost replaced all other muscle relaxants in anesthesia. We have administered this drug to over 10,000 patients. The patient reported on below is the first who exhibited severe allergic skin manifestations with histamine release and circulatory collapse. As no similar observations have been published to our knowledge, the following case report is presented.

Report of a Case

A 61-year-old male was admitted with the diagnosis of an abdominal aortic aneurysm. The history revealed that for about 12 years he had had repeated episodes of pain in the epigastrium and left flank with nausea and vomiting lasting one or two days. These episodes were usually controlled by analgesic injections. He underwent a cholecystectomy 10 years previously because of persisting and unexplained pain. Anesthesia for this operation was induced with nitrous oxide and ether. After this procedure, the painful episodes remained unchanged. The patient had a negative history for allergies, except for a skin rash on the face 20 years previously. The cause of this rash was never determined. It did not respond to ointments and was controlled by x-ray radiation.

The patient was a well-developed male. All findings of physical examination were unremarkable except for moderate hypertension, with blood pressure 170/100 mm. Hg, and abdominal signs. A pulsatile mass 5 in. in diameter was palpable on the left side from the costal margin to just below the umbilicus. Radiologic studies showed clear lung fields, elongation of the aorta, and sclerotic changes in the aortic knob. A plain film of the abdomen revealed a bulging mass outlined with calcium opposite L-2 and L-3; this was presumed to be an aneurysm of the abdominal aorta. A gastrointestinal x-ray series showed compression changes on the third portion of the duodenum and the antrum of the stomach, presumably secondary to an abdominal aortic aneurysm. It also revealed a deformity of the duodenal bulb secondary to peptic ulcer disease. Laboratory findings were as follows: urine, normal; hematocrit, 47%; leukocyte count, 11,400 per cubic millimeter, with 72% polymorphonuclear cells, 6% stab forms, 1% eosinophils, 10% lymphocytes, 8% monocytes, and 3% atypical cells; blood urea nitrogen, 13.1 mg. per 100 cc.; cholesterol, 241 mg. per 100 cc.; serum amylase, 43 units; and blood sugar, 92 mg. per 100 cc.

From the Department of Anesthesiology and the Peripheral Vascular Service, Surgical Division, Montefiore Hospital.

On Dec. 15, 1958, the patient was scheduled for resection of the abdominal aortic aneurysm with graft replacement. Premedication consisted of secobarbital (Seconal) sodium, 100 mg. by mouth, and meperidine (Demerol) hydrochloride, 50 mg., and atropine sulfate, 0.4 mg., intramuscularly. Preoperative blood pressure was 155/100 mm. Hg, and the pulse rate was 100 beats per minute. Anesthesia was induced with an intravenous drip of thiamylal (Surital) sodium, 0.4% in 5% dextrose in water, followed by an intravenous drip of succinylcholine, 0.1% in 5% dextrose and water. The mouth, pharynx, and larynx were sprayed with 5% cocaine, and an endotracheal tube lubricated with 1% cyclomethycaine (Surfacaine) ointment was inserted. Eight minutes after the induction, an urticarial rash appeared, starting at the chest and spreading to every part of the skin of the trunk, head, and extremities. Five minutes later the blood pressure was 70/40 mm. Hg and the pulse, 65 beats per minute. Hydrocortisone sodium succinate (Solu-Cortef), 100 mg., followed by diphenhydramine (Benadryl) hydrochloride in 20-mg. doses (total of 100 mg.), was injected intravenously. Within five minutes the blood pressure continued to drop to 50/? mm. Hg; it then gradually rose to reach preanesthesia levels after 10 minutes. The skin changes disappeared in the next few hours, but facial edema persisted for 24 hours. His temperature the next day was elevated to 100.2 F (37.8 C).

Tests to ascertain the cause of the allergic reaction were carried out. A patch test with secobarbital was negative. Intradermal tests with succinylcholine and thiamylal were considered to be negative, despite the fact that the latter drug caused a slight redness without wheal formation. Cocaine and cyclomethycaine were not tested, since it was not planned to use these drugs again.

The patient was rescheduled for surgery on Dec. 23. Preoperative medicaments were meperidine, 50 mg., and atropine, 0.4 mg. His preanesthesia blood pressure was 160/100 mm. Hg and pulse, 80 beats per minute. Anesthesia was induced with cyclopropane. Succinylcholine, 40 mg., was used for endotracheal intubation. The patient developed the same skin reaction. Hydrocortisone, 100 mg., and diphenhydramine, 50 mg., were used immediately and the blood pressure and pulse remained unchanged. The operation was once again postponed.

On Dec. 26 the patient was tested intravenously to all drugs previously used. This was carried out in the anesthesia induction room in the presence of resuscitative equipment. There were no reactions after intravenous injection of meperidine, 10 mg.; atropine, 0.1 mg.; and thiamylal, 50 mg. Succinylcholine, 0.1% intravenous drip, produced the generalized urticarial reaction after an infusion of 30 mg. The patient required assisted respiration with oxygen for about five minutes, after which his normal muscle tone returned. The rash disappeared after one hour. Other tests, such as having the patient inhale cyclopropane and scrubbing his skin with surgical soap (Septisol), were all negative.

Resection of the abdominal aortic aneurysm with graft replacement was performed three days later with cyclopropane-ether anesthesia after induction with thiamylal sodium. His course during surgery and in the postoperative period was uneventful, and he was discharged on the 16th postoperative day.

Comment

Von Dardel and Thesleff[3] found it impossible to demonstrate any histamine-freeing effect of succinylcholine. They found no bronchoconstriction, salivation, or urticaria. On the other hand, Bourne and associates[4] reported succinylcholine to be a very weak histamine liberator. They assessed this by wheal formation in the human skin and reported it to have about one-hundredth of the activity of tubocurarine.

Routine skin testing for succinylcholine in this patient was negative, thus yielding no information about his true allergic reactions. Only after intravenous administration of the drug did the patient exhibit a prompt and full picture of his allergy. This route for testing was decided on after failure of the routine skin testing, inasmuch as such drugs were and are given intravenously during anesthesia. Although the risk of this form of testing was fully appreciated by us, we nevertheless felt that use of this route was justifiable on the basis of its use on two previous occasions. This test was followed by the immediate and complete control of the untoward reaction by prompt application of all resuscitative and antihistaminic measures.

Summary

In a patient who received several drugs during the course of induction of anesthesia, an unusually severe allergic reaction occurred, with skin manifestations and shock due to histamine release. This patient was proved to be specifically allergic to succinylcholine (Anectine) chloride only. Although intracutaneous tests to the drug were negative, intravenous administration successfully identified the offending agent. It is emphasized that, when this route is used to test possible allergies to drugs, all resuscitative measures should be readily available.

210th Street and Bainbridge Avenue (67) (Dr. Kepes).

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SPECIAL ARTICLE

SURGERY, GENERAL AND ABDOMINAL, 1859-1959

John H. Mulholland, M.D., New York

It is a great honor to stand in the place which has been occupied by so many illustrious men over the 100 years that the Section on Surgery has existed. The names of those who contributed to the deliberations of the Section conjure up a history of surgical progress in America.

It would be difficult for me to review the musings that a survey of the transactions of the Section bring to mind. To chronicle names, dates, and subjects would be simple but dry. As the Chairman's address should be related to theme of the occasion, I have taken this opportunity to track down from records the answer to a question which has long been on my mind: How did the Section get its curious designation, "The Section on Surgery, General and Abdominal"? Why the adjectives "General" and "Abdominal"? Why the conjunction "and"? Why are the adjectives used as supplements? The search disclosed an interesting side light on the history of the Section and led to a consideration of the meanings of the word "general."

In 1859, 12 years after the founding of the American Medical Association, there were two sections formed for the discussion of medical subjects. These were the Section on Practical Medicine and Obstetrics and the Section on Surgery and Anatomy. The development of scientific sections from this beginning is in great part a splitting off from the original two bodies of segments devoted to special subjects and in lesser part to changes in names. The names were ostensibly changed because of new orientations, but this was not entirely so. Detailed deliberations about such matters were not recorded, but there is some evidence that such unscientific considerations as jealousy, pride, jurisdictional disputes, and emotions played a part.

The rise of specialization in surgery can be traced quite clearly. In 1878 the Section on Ophthalmology, Otology, and Rhinology was established. In 1910 the Section on Genito-Urinary Diseases was formed, to become simply the Section on Urology later. In 1912 the Section on Orthopedic Surgery was established, in 1916 the Section on Gastroenterology and Proctology, and in 1940 the Section on Anesthesiology. This lineage and descent begins with the original Section on Surgery and Anatomy. From the other original Section, on Practical Medicine and Obstetrics, another line stemmed. One of the segments became, in 1873, the Section on Obstetrics and Diseases of Women and Children. The evolution of this Section to the present time is described below. In 1880 the word "children" was dropped. In 1911 the name was changed to Section on Obstetrics and Gynecology and in 1912 to Section on Obstetrics, Gynecology, and Abdominal Surgery.

Abdominal Surgery

This is the first appearance of the term in which we are interested, "abdominal," and, since our interest is in its usage as of 1959, we might go into the records for more information. Unfortunately, the minutes of section meetings are composed of titles of papers, names of authors and discussants, and a few formal resolutions. Much of what must have gone on in the hallways is unrecorded. From the tone of many of these carefully worded resolutions, however, it may be inferred that flare-ups of great magnitude were taking place. For instance, at a meeting of the Section on Surgery and Anatomy held on Wednesday, May 6, 1903 (nine years before the appearance of the word "abdominal") it is recorded that Arthur Dean Bevan of Chicago made the following motion:

> That the delegates of the Section on Surgery call the attention of the House of Delegates to the fact that much surgical work such as appendicitis, gastric ulcer, typhoid perforation, and gallbladder surgery is being at the present time duplicated in two sections of this Association, and that the very important work of obstetrics is not being sufficiently emphasized. I move that it is the sense of the Section on Surgery that its interest would best be served if the surgical diseases of women were transferred to the Section on Surgery, leaving to the gynecologic section obstetrics and the diseases of the genital organs of women. I move that the Delegates of the Section of Surgery bring this matter before the House of Delegates.

The motion was duly seconded and carried. There is no record of the immediate reaction to this resolution. That there was a reaction may be surmised from an item in the minutes of the meeting of the Section on Surgery and Anatomy on July 12, 1905, at which Dr. Brayton of Indiana announced to the members that the Indiana delegation had with them the first woman operated on for gallstones and that she would be shown the next day at the Section on Obstetrics and Diseases of Women.

There is also no doubt about the feelings of one man, Dr. H. G. Wetherell, Chairman of the Section on Obstetrics and Diseases of Women, who said in

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From the Department of Surgery, New York University College of Medicine and the Third Surgical Division, Bellevue Hospital.

Chairman's address, read before the Section on Surgery, General and Abdominal, at the 108th Annual Meeting of the American Medical Association, Atlantic City, June 10, 1959.

his Chairman's address in 1911 that gynecologists not only had established gynecologic and obstetric surgery on a scientific basis but in abdominal surgery had blazed the way for the general surgeon. He said further, "The Section should be designated as Obstetrics, Gynecology, and Abdominal Surgery and so come into its own. . . . This would bring back to us some of those who have been lured into other pastures." He agreed that "The average gynecologic and obstetric surgeon is often an indifferent operator when working outside of his pelvic and abdominal limitations, particularly when he attempts brain surgery." The name of the Section was changed the next year and "abdominal surgery" passed to the obstetricians and gynecologists.

Much more must have gone on than the minutes disclose. The speakers at the next year's meeting of the Section on Obstetrics, Gynecology, and Abdominal Surgery included George W. Crile, W. J. Mayo, John B. Deaver, Robert C. Coffey, and John B. Murphy, speaking on such subjects as cancer of the stomach and the technique of cholecystectomy. The program of the Section on Surgery at the same meeting included papers on fractures, bone grafts, dislocations, nephritis, anesthesia, and one of special significance on "Experimental Intestinal Obstruction in Dogs, with Especial Reference to the Cause of Death and the Treatment with Large Amounts of Normal Saline." This is, of course, the classic key paper by Hartwell and Roguet, which showed that the survival time of dogs with intestinal obstruction could be extended from 48 hours to several weeks by administration of water and electrolytes.

The next officially recorded item in this contest was a resolution introduced by Dr. Fred C. Lund of Boston at the 1914 meeting of the Section on Surgery to the effect that the words "and Abdominal Surgery" be omitted from the title "Obstetrics, Gynecology, and Abdominal Surgery" and be added to form the title "Section on Surgery, General and Abdominal." The result was that the words "Abdominal Surgery" were attached to the names of both sections and remained so attached for 24 years.

Blades, in his presidential address before the American Association for Thoracic Surgery in 1958, referred to the "battle for various organs" and "raids outside [the specialist's] designated body cavity" as results of specialty board limitations and impositions. The issue seems to have fronted long before specialty boards appeared.

To continue the chronicle, in 1938 the Section on Obstetrics and Gynecology quietly, at least in official minutes, dropped the words "Abdominal Surgery" from its title. It remains with us, however, a 21-year-old vestige. It might be appropriate at this 100th anniversary to initiate a change in title which would bring us back full circle to the embracing name "Section on Surgery." Let us discard the words "and Abdominal" as a meaningless scar. The tracks back to the origin are really not pleasant to retrace. They lead through human frailties which are no less prominent today.

General Surgery

The word "general" in "general surgery" is, however, worth some discussion. It has come to have various meanings to various people, depending on usage or point of view. "General surgery," in the purest application of the word, means surgery taken as a whole or pertaining to the whole body of surgical knowledge—that is, a concept which deals with universal rather than particular aspects and relates to each and every component of surgery. In the most impure application "general surgery" has come to mean only that which the specialist leaves behind.

The disparity in these two concepts arises because one stems from a consideration of the practice of surgery, the other from the view of advancement of surgical knowledge. The utilization of a special skill in practice is dependent on the incidence of the disease which requires that skill. The generality which is widely applicable arises from thought and study and is dependent on a mind in which an idea was created.

It is true that in the 100 years of this Section's life, blocks of specialty sections have been constantly chipped off, leaving what is considered a smaller and smaller remainder. Yet the substance of general surgery, the size of the section, number of residencies, the literature, the circulation of journals, the number of societies, and the number of certified specialists and of operations performed in general surgery all have increased. How can something be partitioned into many parts and yet expand and grow bigger?

I believe such a paradox is possible because we are talking about different things. Surgery is on the one hand a job to be done, an increasingly complex job and therefore an area in which division of labor is essential. From this standpoint the job is unquestionably done more efficiently by organization into special groups based on skill in the application of technical and specific knowledge or on the extent of the need. Working divisions of the hospital staff, of certifying boards, of societies, and of scientific sections of the American Medical Association are naturally formed and developed.

On the other hand, surgery is a body of knowledge which by its very nature is imperfect; i. e., surgical operations are required because of lack of knowledge of disease. Its content is constantly changing, shifting in emphasis, eliminating, and at the same time growing. The organization of surgical thought for growth of knowledge is not a matter of division into segments for efficiency of service but quite the reverse. This development is dependent on wide encompassing reception of information from all sources into minds in which relationships between seemingly unrelated facts can be seen and organized into concepts.

The American Medical Association was founded for the purpose of considering the deplorable status of medical schools and medical education in 1847. It is understandable that reforms in organization followed the pattern of practice. Universities were not interested in medical schools. All credit for elevation of standards belongs to the practitioners who organized themselves. The better medical schools emerged as those which were formed and influenced by members of the staffs of hospitals. Departments in the medical school were created on the basis of experience with (and therefore incidence of) disease in a hospital, and what was considered basic information required for understanding those diseases. This departmental structure persists to this day and even survived the revolution in medical education carried out in Baltimore by Johns Hopkins University.

As other universities followed the pattern of Johns Hopkins and became more involved in the search for knowledge of disease, a conflict between this purpose and that of practical lessons in the arts of medicine and surgery arose. The evolution of our modern medical school is a feature of this conflict. On the one hand, efficient application of skills demands specialization; and on the other, research demands free general inquiry and breadth. In many medical schools the names of departments as established in 1847 or before persist, but not the content. Educators, on the bases of their own objectives, have changed the structure of such departments as anatomy into research centers of embryology or endocrinology. Biochemistry departments have little interest in the chemical examination of tissues and fluids of the patient; they consider these as matters for the departments of medicine and surgery. Departments of pathology in medical schools are being divorced from the traditional pathological laboratory service of the hospital. The application of pathology as a service to the practitioner is considered a postgraduate technical or specialist discipline which is immediately useful. Undergraduate teaching in pathology is directed toward trying to hunt out mechanisms of disease, whether or not there is a morphologic manifestation, and to deal with material which will be the applied knowledge of the future.

Generalities

This trend toward impressing on the mind of the undergraduate generalities which will be applicable to all of his medical thinking in the future meets one of its great obstacles in surgery. The traditional equipment for surgical action is a detailed knowledge of anatomy. Anatomy department personnel have decided that other, more catholic, matters have crowded out descriptive static information. And, much as we decry this attitude, they may be right. Is it more important for the physician of the future to know the anatomic relations of the ulnar nerve or to know the laws of enzyme activity? We would agree that it is not bad for everyone to know about the ulnar nerve and certainly very necessary for some, but knowledge of energy-producing enzyme systems is knowledge of life itself, and universally important.

New knowledge, of greater importance and universality, has continued to accumulate like nutriment in the roots of a tree. It forces what was there further up the trunk, into the branches, to the distal leaves. Growth is conspicuous in the visible aboveground structure but takes place fundamentally in the buried, unseen underground. General surgery may be considered in one respect to be like tree growth. It serves as the entering point of general knowledge to be spread through all surgical endeavor. Departments of surgery in a medical school must deal in generalities in their undergraduate responsibilities. Fundamental generalities must be established in deeper roots of biology and chemistry, and the department of surgery must establish the place of those generalities in surgical thinking.

The development of what is now everyday knowledge of fluid and electrolyte metabolism in man is an example of what I mean. We can trace back to the physicist Arrhenius (who, like this Section, was born 100 years ago) the first light about electrolytic dissociation. In someone's mind the empirically established efficacy of sodium bicarbonate solution in the treatment of cholera, which was noted in 1832 by O'Shaughnessy, was finally connected with the basic physics of solutions. This trail of ideas might have gone through the minds of physiologists, such as Starling; biochemists, such as Clark, Van Slyke, and Hastings; pediatricians such as Holt, Howland, Marriot, and Gamble; and many others down into minds seeking answers to surgical problems. The result is some approach to a universal law which is applicable generally.

It is obvious that the favored and perhaps pretentious interpretation of the word "general" in "general surgery" is universality, or the root source for all the branches. It is really a word, though, which means no more and no less than the user intends it to mean. For example, in his delightful book, "To Work in the Vineyard of Surgery," Churchill states, "There is much evidence to show that the adjective 'General' [in Massachusetts General Hospital] refers not to a wide range of human ills and ailments, as commonly supposed, but to the principle that there shall be no racial, religious, social or economic restrictions applicable to the people it serves."

There is another instance in an obituary memoir of Dallas B. Phemister, published in the *Transactions of the American Surgical Association* for 1952. The concluding sentence is, "It might well be said that he was one of the last of the great general surgeons." This implied, I think, that Phemister's interests were spread out and that he involved himself in all surgical activities. While I agree with the designation "great general surgeon," I believe it applies to him because he had depth rather than width of interests. His search into mechanisms was so profound that what he said and wrote was of general importance. That he was not the last is attested by the career of one of his great pupils, whose interests are listed in "American Men of Science" as "calcium metabolism, sex hormones, cancer, enzymes of the blood, and bone physiology." The depth of these interests has resulted in advancing all surgical knowledge useful to the gynecologist, urologist, orthopedist, and general surgeon alike.

This Section on Surgery is a forum for the dissemination of surgical knowledge. It is distinct from other forums in that for 100 years its purpose has been to join the minds of those whose job it is to dig for information with the minds of those whose job it is to use the information intelligently. There is little of the ritualistic exclusiveness of other surgical societies in its membership. Somewhere along the line it acquired an invidious name, as a result of differences in opinion among those who were performing the ultimate task of utilizing knowledge. For a time the Section identified itself more with the utilitarian aspect and became involved in quarrels about jurisdictional rights and practicing privileges. This is understandable, because surgery is so much a matter of utilizing knowledge directly and by specific action. More farsighted is the later and modern identification of its bonds to the other end of the production line. The next 100 years will see expansion of the content of knowledge and responsibility for its application beyond any experience in history. May the Section on Surgery, which I hope it will be called, expand in like fashion.

550 First Ave. (16).

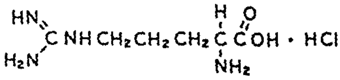
COUNCIL ON DRUGS

NEW AND NONOFFICIAL DRUGS

The following descriptions of drugs are based on available evidence and do not in any case imply endorsement by the Council.

H. D. Kautz, M.D., *Secretary*.

Arginine Hydrochloride (Argivene).—L-Arginine hydrochloride.—The structural formula of arginine hydrochloride may be represented as follows:



$$\begin{matrix}HN\\H_2N\end{matrix}\!\!>C\,NH\,CH_2CH_2CH_2\underset{NH_2}{\overset{H}{C}}\overset{O}{C}OH\cdot HCl$$

Actions and Uses.—Arginine hydrochloride is an amino acid preparation with pharmacological actions and clinical uses similar to those of sodium glutamate. (See the monograph on sodium glutamate in New and Nonofficial Drugs.) Its intravenous administration causes a lowering of blood ammonia levels. This effect is of very limited usefulness for the symptomatic management of gravely ill patients with encephalopathies associated with ammoniacal azotemia, usually the result of severe liver dysfunction (so-called hepatic coma). Although the drug has no effect on the course of the liver disease itself, its ability to lower blood ammonia levels may bring about a reversion of the neurological status from stupor to consciousness. As in the case of sodium glutamate, symptomatic improvement with arginine hydrochloride seems to be most pronounced in those patients whose comatose condition has been precipitated by circulatory nitrogenous loads of exogenous origin. The proper management of hepatic encephalopathies with hyperammoniemia includes a low-protein intake, antibiotics given orally, evacuation of the gastrointestinal tract, and dextrose infusions. Hence, the intravenous use of arginine hydrochloride in such cases is considered an adjunct to other measures designed to lower blood ammonia levels.

Ammoniemia is sometimes observed in such other conditions as congestive heart failure, severe infections, anoxic states, shock, certain types of poisoning, metabolic acidosis (including diabetic coma) and erythroblastosis fetalis. It is doubtful, however, that these conditions are positive indications for arginine infusions.

Arginine hydrochloride is sodium-free and, hence, is better tolerated than equivalent amounts of sodium glutamate. The chief hazard to its use is associated with the presence of the chloride ion in the salt. Thus, the drug should be used with caution in patients with hyperchloremic acidosis, especially in the presence of renal disease or anuria.

Dosage.—Arginine hydrochloride is administered intravenously. A solution containing 20 Gm. of the drug in 50 cc. of water is diluted with 500 to 1,000 cc. of 5 to 10% dextrose in water for injection. This diluted solution is then infused by intravenous drip over a period of four hours.

Preparations.—solution (injection) 20 Gm. in 50 cc.

Year of introduction: 1957.

Gray Pharmaceutical Company, Inc., cooperated by furnishing scientific data to aid in the evaluation of arginine hydrochloride.

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EXTERNAL AND MIDDLE EAR INFECTIONS

INFECTION of the external auditory canal and chronic infection of the middle ear that has failed to resolve comprise two widely encountered clinical entities. In the case of the former, external otitis constitutes anywhere from 5 to 40% of all ear infections seen in the United States, the wide variation being due to regional and sectional differences in atmospheric temperature and humidity.

Judicious selection of medicaments for the treatment of external otitis, the more common types of which include furunculosis, otomycosis, and eczematous dermatitis, often depends on the bacteriology of the infectious process. The causative agent of external otitis can be any one of a number of gram-positive or gram-negative bacteria and fungi. In troublesome cases, antibiotic sensitivity tests can aid in the selection of the most effective antimicrobial drugs for use in therapy. These tests, however, are not foolproof, and their interpretation requires experience and judgment for proper evaluation.

Until fairly recently little attention was paid either to the pH of the skin of the external auditory canal or to the pH of solutions applied to it. In a series of investigations, Fabricant and Perlstein[1] have pointed out that the pH of solutions applied to the skin of the external auditory canal is an important factor in therapy. It is not uncommon to find that the difference in effectiveness of two apparently similar agents is due to the ability of one medicament to produce or enhance a state of acidity, while the other produces or enhances a state of alkalinity that is unphysiologic and provides fertile soil for the propagation of infection. Once there is interruption of the continuity of the epithelial lining and an alteration of the pH from the acid to the alkaline side, bacteria and fungi have their greatest opportunity for growth and multiplication. These properties are enhanced by the use of solutions in the external auditory canal whose pH is alkaline.

Susceptibility to infection by bacteria is widely held to be due to the removal of the antibacterial "acid mantle" and its displacement by an abnormal "alkaline mantle." This phenomenon is especially applicable to the external auditory canal, which by virtue of its exposed position to the outside world is subject to dermatological lesions, traumatic and clinical indignities, and invasion by a host of micro-organisms. Here, a moist environment containing cellular detritus and cerumen frequently serves as an adequate culture medium for the growth of bacteria and fungi.

The seborrheic areas of the body are generally more alkaline than other parts of the skin's surface. Alkaline areas are less bactericidal than the rest of the skin and consequently are predisposed to infection. Measurements of the pH of the skin of the external auditory canal, clinically normal, produced pH values chiefly within the acid range. Measurements of the pH of the skin in external otitis, by Fabricant,[1b] showed the pH range in men to be from 7.1 to 7.8 and in women to be from 7.1 to 7.4.

Various topical bactericidal otic solutions have been introduced in recent years for the treatment of external otitis and chronic suppurative otitis media. Many of them have a useful place in contemporary practice. In many instances the clinical response is satisfactory, yet enough failures exist to make the physician aware of the truth of the old adage "sometimes they work and sometimes they don't." In troublesome cases of chronic suppurative otitis media it is always worth considering the systemic use of antibiotics and sulfonamides. From time to time surprisingly favorable responses are obtained, to the delight of the patient who has almost given up hope and the prescribing physician who also has begun to despair. While bacteriological studies and sensitivity tests frequently assist in the choice of appropriate medication, neither studies nor tests guarantee the drying of the discharge from a chronically infected middle ear cavity. The drying of the ear itself holds the secret of success or failure.

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[1] (*a*) Fabricant, N. D., and Perlstein, M. A.: pH of Cutaneous Surface of External Auditory Canal: Study of 27 Infants, 44 Children and 60 Adults, Arch. Otolaryng. 49:201-209 (Feb.) 1949. (*b*) Fabricant, N. D.: pH Factor in Treatment of Otitis Externa, A. M. A. Arch. Otolaryng. 65:11-12 (Jan.) 1957.

ORGANIZATION SECTION

REPORT OF THE SECTIONS OF THE SCIENTIFIC ASSEMBLY

ATLANTIC CITY MEETING, JUNE 8-12, 1959

SECTION ON ANESTHESIOLOGY

The Section on Anesthesiology held its first meeting on Wednesday morning, June 10, in the Ballroom of the Shelburne Hotel. On Thursday morning, June 11, it met jointly with six other Sections in a symposium on childbirth, in the Ballroom of Convention Hall and on Thursday afternoon jointly with the Section on Nervous and Mental Diseases in a symposium on hypnosis in Room D, Convention Hall. The final meeting was held on Friday morning, June 12, in the Ballroom of the Shelburne Hotel. In addition to the joint meetings 14 papers were presented, 7 of which were included in a symposium on complications of anesthesia.

At the business meeting on Wednesday, June 10, reports were given by the Secretary, the representative to the American Board of Anesthesiology and the Section Delegate. Members of the Section who participated in the Scientific Exhibit were presented.

Two resolutions were passed. The first was in opposition to a third year in training in anesthesiology and was directed to the Council on Medical Education and Hospitals. The second resolution approved mouth-to-mouth breathing in resuscitation.

At the business meeting on Friday, June 12, the following officers were elected: Chairman, Dr. Meyer Saklad, Providence, R. I., and Vice-chairman, Dr. Alice McNeal, Birmingham, Ala. The Secretary, Dr. Vincent J. Collins, New York, and the Assistant Secretary, Dr. Kenneth K. Keown, Columbia, Mo., were continued in their terms expiring in 1961. The Delegate, Dr. Joseph H. Failing, Los Angeles; the Alternate Delegate, Dr. Ralph Sappenfield, Miami, Fla., and the Representative to the Scientific Exhibit, Dr. Edwin L. Rushia, Augusta, Ga., were continued until 1960.

The Section sponsored six scientific exhibits, of which one received a certificate of merit, one an honorable mention, and one a certificate of appreciation.

SECTION ON DERMATOLOGY

The Section on Dermatology met in Convention Hall, Room A, on Wednesday, Thursday, and Friday mornings, June 10, 11, and 12. Sixteen papers were presented in addition to a panel discussion on corticosteroid therapy in dermatology.

At the business meeting on Friday, June 12, the following officers were elected: Chairman, Dr. Wiley M. Sams, Miami, Fla.; Vice-chairman, Dr. William J. Morginson, Salt Lake City, Utah; Secretary, Dr. Edward P. Cawley, Charlottesville, Va.; Asst. Secretary, Dr. Harry L. Arnold, Jr., Honolulu, Hawaii; Delegate, Dr. Winfred A. Showman, Tulsa, Okla.; Alternate Delegate, Dr. Maurice J. Costello, New York; Representative to the Scientific Exhibit, Dr. Stanley E. Huff, Evanston, Ill. It was also voted that Dr. Beatrice M. Kesten, New York, be designated as a representative of the Section on Dermatology to the American Board of Dermatology, and Dr. J. Walter Wilson, Los Angeles, the representative of the Section to the International Congress on Dermatology which meets in the United States in 1962.

The Section sponsored 15 exhibits in the Scientific Exhibit. There were three awards, one a certificate of merit and two honorable mentions. In addition, a certificate of merit was awarded for medical photography in one of the exhibits.

SECTION ON DISEASES OF THE CHEST

The Section on Diseases of the Chest met four times, three of them in joint session. On Tuesday afternoon, June 9, in Borton Hall, Dennis Hotel, a joint session was held with the Section of Gastroenterology and Proctology and the Section on Radiology on esophageal hiatal hernia. On Wednesday afternoon, June 10, there was a symposium on pneumoconiosis with the Section on Preventive Medicine. On Thursday morning, June 11, the Section participated in the symposium on childbirth with six other Sections. The final meeting was held in Borton Hall, Dennis Hotel, where nine papers and two panel discussions were presented.

At the business meeting on Friday, June 12, the following officers were elected: Chairman, Dr. Seymour M. Farber, San Francisco; Vice-chairman, Dr. Herman J. Moersch, Rochester, Minn.; Secretary, Dr. Burgess L. Gordon, Albuquerque, N. Mex.; Delegate, Dr. J. Winthrop Peabody, Sr., Washington, D. C.; Representative to the Scientific Exhibit, Dr. Edwin R. Levine, Chicago.

The Section sponsored seventeen exhibits in the Scientific Exhibit, of which one received a certificate of merit and one an honorable mention. The Section also sponsored the Special Exhibit on Pulmonary Function.

SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

The Section on Experimental Medicine and Therapeutics held its first meeting Tuesday afternoon, June 9, in Ritz Hall, Ritz Carlton Hotel. In addition to the Chairman's Address and the George Minot Lecture, there was a symposium on the direct relief of coronary occlusion. On Wednesday morning, June 10, this Section joined with five other Sections for the symposium on hepatic diseases. On Thursday afternoon, June 11, there was a joint meeting with the Section on Internal Medicine in the Ballroom, Convention Hall, with a symposium on coronary disease.

The Section observed its centennial at Atlantic City, N. J., the guest speaker being Dr. J. N. Morris of London.

At the business meeting on Tuesday, June 9, the following officers were elected: Chairman, Dr. Jack D. Myers, Pittsburgh; Vice-chairman, Dr. Elliot V. Newman, Nashville, Tenn.; Secretary, Dr. Samuel P. Martin, Gainesville, Fla.; Delegate, Dr. Harry F. Dowling, Chicago; and Representative to the Scientific Exhibit, Dr. Joseph F. Ross, Los Angeles.

The Section sponsored 29 exhibits in the Scientific Exhibit. There were four awards, the Hektoen Silver Medal, one certificate of appreciation, and two honorable mentions. In addition, there was an honorable mention for medical photography in one of the exhibits.

SECTION ON GASTROENTEROLOGY AND PROCTOLOGY

The Section on Gastroenterology and Proctology held four meetings, three of them jointly with other Sections. On Tuesday afternoon, June 9, it joined with the Sections on Diseases of the Chest and Radiology for a symposium on esophageal hiatal hernia, Borton Hall, Dennis Hotel. On Wednesday morning, June 10, there was a symposium on gastric cancer with the Sections on Radiology and Pathology and Physiology in Trimble Hall, Claridge Hotel. On Wednesday afternoon the Section joined with five other Sections in the symposium on hepatic diseases. The final meeting was held on Thursday morning, June 11, in Trimble Hall, Claridge Hotel, when four papers were presented and followed by a panel discussion on steatorrhea.

At the business meeting on Thursday, June 11, the following officers were elected: Chairman, Dr. Joseph B. Kirsner, Chicago; Vice-chairman, Dr. William H. Dearing, Rochester, Minn.; Secretary, Dr. Gordon McHardy, New Orleans; Delegate, Dr. Stuart T. Ross, Garden City, N. Y.; Alternate Delegate, Dr. Neil Swinton, Boston; Representatives to the Scientific Exhibit, Dr. Thomas E. Machella, Philadelphia, and Dr. Willard Bernhoft, Buffalo.

Sixteen exhibits in the Scientific Exhibit were sponsored by the Section. Of four awards presented, one was a certificate of merit, one a certificate of appreciation, and two honorable mentions. In addition, an honorable mention was awarded for medical illustration in one of the exhibits.

SECTION ON GENERAL PRACTICE

The Section on General Practice met four times, three being joint meetings with other Sections. All meetings were held in the Ballroom, Convention Hall. The first meeting was Tuesday afternoon, June 9, when eleven papers were presented, five of which composed a symposium on viruses. On Wednesday afternoon, June 10, the Section joined with five other Sections in the symposium on hepatic diseases, and on Thursday morning, June 11, it participated in the symposium on childbirth with six other Sections. On Friday morning, June 12, a symposium on athletic injuries was held with the Sections on Orthopedic Surgery and Physical Medicine.

At the business meeting on Tuesday, June 9, the following officers were elected: Chairman, Dr. Robert L. Crawford, Lancaster, S. C.; Vice-chairman, Dr. Charles Alvey, Muncie, Ind.; Secretary, Dr. E. I. Baumgartner, Oakland, Md.; Representative to the Scientific Exhibit, Dr. I. Phillips Frohman, Washington, D. C.; Delegate, Dr. Lester D. Bibler, Indianapolis; Alternate Delegate, Dr. Milton Casebolt, Kansas City, Mo. Dr. Charles McArthur was reappointed as Chairman of the committee in charge of physical examinations for physicians.

The Section sponsored 24 exhibits in the Scientific Exhibit. There were three awards, consisting of the Billings Bronze Medal, a certificate of merit, and an honorable mention. The Section also sponsored "A P. E. For Every M.D." promoting annual physical examinations for physicians. In Atlantic City 1,037 electrocardiograms were made of which approximately 23% were abnormal or borderline cases. This was considerably higher than in previous years when the figure was about 18%. Of 802 chest x-rays made, about 18% showed abnormality. There were 60 tuberculosis suspects, 28 cardiovascular abnormalities, and 43 other chest conditions.

SECTION ON INTERNAL MEDICINE

The Section on Internal Medicine met four times, twice in joint meetings with other Sections. At the first meeting on Wednesday morning, June 10, in the Ballroom, Convention Hall, four papers were presented, including the Billings Lecture, followed by a panel discussion on intractable angina pectoris. On Wednesday afternoon, the Section joined five other Sections in the symposium on hepatic diseases. On Thursday morning, June 11, the Section met in Ritz Hall, Ritz Carlton Hotel, where four papers were presented, together with a panel discussion on the etiology of infections. The final meeting in the Ballroom, Convention Hall, on Thursday afternoon, June 11, was a symposium on coronary disease with the Section on Experimental Medicine and Therapeutics. The Chairman devoted his address to "The Endeavor of Internal Medicine, 1859-1959," since this was the centennial meeting of the Section.

At the business meeting on Thursday, June 11, the following officers were elected: Chairman, Dr. R. H. Kampmeier, Nashville, Tenn.; Vice-chairman, Dr. George T. Harrell Jr., Gainesville, Fla.; Secretary, Dr. Wright R. Adams, Chicago; Delegate, Dr. Charles T. Stone Sr., Galveston, Texas; Alternate Delegate, Dr. Carter Smith, Atlanta, Ga.; and Representative to the Scientific Exhibit, Dr. Henry T. Ricketts, Chicago.

The Section sponsored 22 exhibits in the Scientific Exhibit, of which one received a certificate of merit and two honorable mentions.

SECTION ON LARYNGOLOGY, OTOLOGY, AND RHINOLOGY

The Section on Laryngology, Otology, and Rhinology met three times in the St. Dennis Room, Dennis Hotel, on Tuesday, Wednesday, and Thursday afternoons, June 9, 10, and 11. Twenty papers were read, including that of the guest of honor, Dr. George M. Coates, Philadelphia.

At the business meeting on Tuesday, June 9, reports were heard from the Section Delegate and the Section Representative to the Board of Governors of the American College of Surgeons. A resolution was passed, urging that audiograms be included in the physical examinations of physicians at the annual meeting.

The following officers were elected: Chairman, Dr. Paul H. Holinger, Chicago; Vice-chairman, Dr. Lawrence R. Boies, Minneapolis; Secretary, Dr. Walter E. Heck, San Francisco; Delegate, Dr. Gordon F. Harkness, Davenport, Iowa; Alternate Delegate, Dr. Dean Lierle, Iowa City, Iowa; Representative to the Scientific Exhibit, Dr. Walter H. Maloney, Cleveland.

In the Scientific Exhibit, the Section sponsored nine exhibits, of which one was awarded the Billings Gold Medal, one a certificate of merit, and one an honorable mention.

SECTION ON MILITARY MEDICINE

The Section on Military Medicine met three times on Tuesday, Wednesday, and Thursday afternoons, June 9, 10, and 11 in Room A, Convention Hall. Ten papers were presented in addition to three panel discussions and a symposium. A new feature of the program was initiated at this meeting, consisting of audio-visual presentations in conjunction with the papers.

At the business meeting on Tuesday, June 9, the following officers were elected: Chairman, Dr. George H. Houck, Palo Alto, Calif.; Vice-chairman, Dr. James H. Kidder, Washington, D. C.; Secretary, Dr. James T. McGibony, Washington, D. C.; Delegate, Dr. Alphonse McMahon, St. Louis, Mo.; Alternate Delegate, Dr. Charles L. Leedham, Cleveland; Representative to the Scientific Exhibit, Dr. Frank M. Townsend, Washington, D. C.

The Section sponsored 16 exhibits in the Scientific Exhibit. There were two awards, one certificate of merit and one honorable mention.

Point credit was given to active and reserve officers of the Air Force, Army, and Navy for attendance at the meeting.

SECTION ON NERVOUS AND MENTAL DISEASES

The Section on Nervous and Mental Diseases met five times, two of them jointly with other Sections. On Tuesday afternoon, Wednesday morning, and Wednesday afternoon, June 9 and 10, the Section met in Room D, Convention Hall, papers being devoted to the three branches of the Section—neurology, psychiatry, and neurosurgery. On Thursday morning, June 11, the Section participated with six other Sections in the symposium on childbirth, and on Thursday afternoon with the Section on Anesthesiology in a symposium on hypnosis. In addition to joint meetings, 18 papers were presented.

At the business meeting on Wednesday morning, June 10, the following officers were elected: Chairman, Dr. E. S. Gurdjian, Detroit; Vice-chairman, Dr. William T. Lhamon, Houston, Texas; Secretary, Dr. Howard P. Rome, Rochester, Minn.; Delegate, Dr. Francis M. Forster, Madison, Wis.; Alternate Delegate, Dr. Karl O. Von Hagen, Los Angeles; Representative to the Scientific Exhibit, Dr. Benjamin Boshes, Chicago. Dr. Alexander Ross, Indianapolis, and Dr. Jacques Gottlieb, Detroit, were nominated for Director of the American Board of Psychiatry and Neurology.

The Section sponsored 13 exhibits in the Scientific Exhibit, one of which was awarded the Billings Silver Medal and one a certificate of merit.

The 1959 meeting was the centennial of the Section. It was observed by a centennial address of the Chairman on psychotherapy and a special exhibit showing the progress of the Section during the last 100 years.

SECTION ON OBSTETRICS AND GYNECOLOGY

The Section on Obstetrics and Gynecology met three times, once alone and twice jointly with other Sections. At the first meeting on Wednesday morning, June 10, held in Ritz Hall, Ritz Carlton Hotel, three papers and a panel discussion on pelvic exenteration were presented. The Section joined with six other Sections on Thursday morning, June 11, for the symposium on childbirth, and on Friday morning with the Section on Pathology and Physiology for panel discussions on erythroblastosis fetalis or hemolytic disease of the newborn and on ovarian tumors.

The centennial of the Section was observed by a commemorative luncheon on Wednesday, June 10, with Professor Andrew Claye, Leeds, England, President of the Royal College of Obstetricians and Gynecologists, as the guest speaker.

At the business meeting, on June 10, the following officers were elected: Chairman, Dr. Curtis Lund, Rochester, N. Y.; Vice-chairman, Dr. H. Close Hesseltine, Chicago; Secretary, Dr. Keith P. Russell, Los Angeles; Delegate, Dr. Ralph E. Campbell, Madison, Wis.; Alternate Delegate, Dr. Roy J. Heffernan, Brookline, Mass.; and Representative to the Scientific Exhibit, Dr. Frederick H. Falls, Oak Park, Ill. The Section Delegate gave a report followed by a discussion of the Section's relationship and participation in the functions of the Joint Commission on Accreditation of Hospitals and in the proposed General Practice Training Program under consideration by the House of Delegates.

The Section sponsored 23 exhibits in the Scientific Exhibit, one of which received a certificate of merit and one an honorable mention.

SECTION ON OPHTHALMOLOGY

The Section on Ophthalmology met in the Renaissance Room of the Ambassador Hotel on Wednesday, Thursday, and Friday mornings, June 10, 11, and 12. Twenty-three papers were presented, including the address of the invited foreign guest, Dr. S. P. Meadows, London. The Association for Research in Ophthalmology met under the auspices of the Section on Ophthalmology on Tuesday, Wednesday, and Thursday afternoons, June 9, 10, and 11, when 24 papers were presented.

At the business meeting on Thursday, June 11, the following resolution was passed:

> WHEREAS, Glaucoma is a leading cause of irreversible blindness in adults in the United States; and
>
> WHEREAS, The National Medical Foundation for Eye Care has introduced a Glaucoma Identification Card which will identify glaucoma patients to all attending physicians in any circumstance, especially in emergency, and thus facilitate the continuity of medical care which is essential in the management of the disease and the prevention of blindness from this cause; therefore be it
>
> *Resolved*, That the attention of the members of the medical profession be directed to the Glaucoma Identification Card which will make immediately available to all attending physicians information concerning the patient's use of and requirement for miotics and other medications.

Reports of the following representatives from the Section were accepted and submitted to the Board of Trustees for approval:

American Committee on Optics and Visual Physiology
American Board of Ophthalmology
National Registry of Ophthalmic Pathology
Scientific Exhibit
National Conference on Medical Nomenclature
College of Surgeons, Board of Governors
American Orthoptic Council
Lucian Howe Fund
Research in Ophthalmology and Blindness
Delegate to House of Delegates
Program Committee

The Executive Committee recommended that the Committee on Museum of Ophthalmic History be continued for one more year.

The following appointments, recommended by the Executive Committee, were approved by the Section:

Dr. Arthur Linksz reappointed to the American Committee on Optics and Visual Physiology; Dr. A. Edward Maumenee appointed to the American Board of Ophthalmology; Dr. A. B. Reese reappointed to the National Registry of Ophthalmic Pathology; Dr. Derrick Vail reappointed delegate and Dr. W. Guernsey Frey, alternate delegate, to the International Federation of Ophthalmic Societies; Dr. Robert Laughlin reappointed to the American Orthoptic Council; Drs. A. D. Ruedemann and Michael J. Hogan reappointed to the National Committee for Research in Ophthalmology and Blindness; Dr. James H. Allen reappointed delegate to the Pan American Congress of Ophthalmology; Drs. Burton Chance, Hans Barkan and Frederick C. Cordes reappointed as representatives to the Museum of Ophthalmic History; Dr. Conrad Berens reappointed as representative to the National Conference on Medical Nomenclature; Drs. Ramon Castraviego and Phinizy Calhoun reappointed to the Committee on Eye Banks, and Drs. Harold F. Falls, William F. Hughes Jr., Albert N. Lemoine Jr., Kenneth C. Swan, Michael J. Hogan, and Bernard Becker reappointed and Drs. Edward W. D. Norton and DuPont Guerry III appointed to the Program Committee.

The Section nominated three members, Drs. S. Rodman Irvine, Ralph W. Danielson, and Ralph O. Rychener for selection of one to serve on the Board of Governors of the American College of Surgeons for the term 1960 to 1963.

The Section submitted the names of Drs. Arthur Gerard DeVoe, Angus MacLean, and Ralph O. Rychener as nominees from the Section for selection of one to serve on the Advisory Council of the American College of Surgeons.

The $250 prize for the best exhibit was awarded to Drs. Gilbert Baum and Ivan Greenwood for their exhibit "Application of Ultrasonic Locating Techniques to Ophthalmology."

The $250 prize for the best paper was awarded to Drs. Thomas P. Kearns, Robert M. Salassa, Collin S. MacCarth, and James W. Kernohan for their paper "Ocular Manifestations of Pituitary Tumor in Cushing's Syndrome," judged on the basis of presentation and originality.

The Prize Medal in Ophthalmology was awarded to Dr. Francis Heed Adler for his many contributions to the specialty.

At the business meeting, the following Section officers were elected: Chairman, Dr. Harold G. Scheie, Philadelphia; Vice-chairman, Dr. Paul A. Chandler, Boston; Secretary, Dr. Henry F. Allen, Boston; and Representative to the Scientific Exhibit, Dr. Frank W. Newell, Chicago; Committee on the Award of the Knapp Medal: Drs. Arthur Bedell, Chairman; A. D. Ruedemann and James H. Allen.

The Section sponsored 14 exhibits in the Scientific Exhibit, to which several awards were given. In addition to one certificate of merit and two honorable mentions, the Section award of $250 was made to Drs. Gilbert Baum and

Ivan Greenwood as noted above. A certificate of merit was given to a medical illustrator for the outstanding illustration in one of the scientific exhibits in this Section.

SECTION ON ORTHOPEDIC SURGERY

The Section on Orthopedic Surgery held three meetings, one being a joint session. At the meeting on Wednesday morning, June 10, in Kerry Hall, Shelburne Hotel, seven papers were presented, and on Thursday morning, June 11, six papers were presented. On Friday morning, June 12, in the Ballroom of Convention Hall, a symposium on athletic injuries was presented jointly with the Sections on General Practice and Physical Medicine.

At the business meeting on Wednesday, June 10, the report of the Section Delegate, Dr. H. Relton McCarroll, was received. On Thursday, June 11, the following officers were elected: Chairman, Dr. H. Herman Young, Rochester, Minn.; Vice-chairman, Dr. James Vernon Luck, Los Angeles; Secretary, Dr. Robert J. Joplin, Brookline, Mass.; Asst. Secretary, Dr. John C. Wilson Jr., Los Angeles; Delegate, Dr. Edward L. Compere, Chicago; Alternate Delegate, Dr. Harry R. Walker, Oakland, Calif.; Representative to the Scientific Exhibit, Dr. James I. Kendrick, Cleveland; and Assistant Representative to the Scientific Exhibit, Dr. Ernest Burke Evans, Galveston, Texas; Representatives to the American Board of Orthopedic Surgery, Dr. David S. Grice, Philadelphia, and Dr. Edwin R. Schottstaedt, San Francisco. The Section did not name any alternates for the two representatives to the American Board of Orthopedic Surgery.

The Section sponsored 22 exhibits in the Scientific Exhibit, of which one received a certificate of merit and one an honorable mention.

SECTION ON PATHOLOGY AND PHYSIOLOGY

The Section on Pathology and Physiology held four meetings, including three joint sessions. On Wednesday morning, June 10, there was a joint session with the Section on Radiology in Trimble Hall, Claridge Hotel, with a symposium and panel discussion on gastric cancer. On Wednesday afternoon, the Section participated with five other Sections in the symposium and panel discussion on hepatic diseases. On Thursday morning, June 11, the Section met in the Ballroom, Shelburne Hotel, where seven papers were presented. The final meeting on Friday, June 12, was held with the Section on Obstetrics and Gynecology, and presented panel discussions on erythroblastosis fetalis and on ovarian tumors.

The Section celebrated 100 years of physiology, the guest speaker being Dr. R. R. A. Coombs, Cambridge, England.

At the business meeting on Thursday, June 11, the Section passed a resolution urging the Council on Scientific Assembly to continue exploration of the possible establishment of an exhibit in clinical pathology of practical scope. A report from the Section Delegate was received.

The following officers were elected: Chairman, Dr. Russell L. Holman, New Orleans; Vice-chairman, Dr. Lester R. Dragstedt, Chicago; Secretary, Dr. Hugh E. Edmondson, Los Angeles; Delegate, Dr. Lall G. Montgomery, Muncie, Indiana; and Representative to the Scientific Exhibit, Dr. Edwin R. Levinson, Chicago.

The Section sponsored 13 exhibits in the Scientific Exhibit. There were two awards, one certificate of merit and one honorable mention. In addition, the Section sponsored the special exhibit on fresh tissue pathology.

SECTION ON PEDIATRICS

The Section on Pediatrics held three meetings, two of which were joint sessions with other Sections. At the first meeting on Tuesday afternoon in the Ballroom, Shelburne Hotel, eight papers were presented. On Wednesday afternoon, June 10, a joint session was held with the Section on Urology in Ritz Hall, Ritz Carlton Hotel, when six papers were read. The Section joined with six other Sections on Thursday morning, June 11, for the symposium on childbirth.

At the business meeting on Tuesday, June 9, it was voted to approve the brochure "Care of Children in Hospitals," prepared by the American Academy of Pediatrics. The Section endorsed the First International Conference on Mental Retardation to be held in Portland, Maine, on July 27-31, 1959. The report of the Custodian of the Jacobi Fund was approved.

The following officers were elected: Chairman, Dr. Clement A. Smith, Boston; Vice-chairman, Dr. Robert Grayson, Miami Beach, Fla.; Secretary, Dr. Arild E. Hansen, Galveston, Texas; Delegate, Dr. Walter B. Stewart, Atlantic City, N. J.; and Representative to the Scientific Exhibit, Dr. F. Thomas Mitchell, Memphis, Tenn.

The Section sponsored 20 exhibits in the Scientific Exhibit. Three exhibits received awards, consisting of the Hektoen Bronze Medal, a certificate of merit, and an honorable mention.

SECTION ON PHYSICAL MEDICINE

The Section on Physical Medicine met four times, once jointly with another Section. At the first three meetings in Kerry Hall, Shelburne Hotel, on Tuesday, Wednesday, and Thursday afternoons, June 9, 10, and 11, fourteen papers were presented in addition to a panel discussion on overwork of the neuromuscular mechanism by therapeutic and/or other exercise. The last meeting on Friday morning, June 12, in the Ballroom, Convention Hall, was a symposium on athletic injuries with the Sections on General Practice and Orthopedic Surgery.

At the business meeting on Wednesday, June 10, the following officers were elected: Chairman, Dr. Lewis A. Leavitt, Houston, Texas; Vice-chairman, Dr. James W. Rae, Ann Arbor, Mich.; Secretary, Dr. Earl C. Elkins, Rochester, Minn.; Delegate, Dr. Walter J. Zeiter, Cleveland; Alternate Delegate, Dr. A. B. C. Knudson, Washington, D. C.; Representative to the Scientific Exhibit, Dr. Ralph Worden, Los Angeles.

The Section sponsored nine exhibits in the Scientific Exhibit. There were two awards, consisting of a certificate of merit and an honorable mention.

SECTION ON PREVENTIVE MEDICINE

The Section on Preventive Medicine held three meetings, two of them joint meetings with other Sections. At the first meeting in the St. Dennis Room, Dennis Hotel, on Wednesday morning, June 10, five papers were presented. On Wednesday afternoon, the Section joined with the Section on Diseases of the Chest for two symposiums, one on pneumoconiosis and the other on heart disease and employment. On Thursday morning, June 11, the Section participated in the symposium on childbirth with six other Sections.

This was the centennial year of the Section, which was observed by an address by Dr. Walter L. Bierring, Des Moines, Iowa, on "The Changing Aspects of Preventive Medicine Over 100 Years."

At the business meeting on Wednesday, June 10, the following officers were elected: Chairman, Dr. Wilford T. Hall, Dayton, Ohio; Vice-chairman, Dr. Wilson T. Sowder, Jacksonville, Fla.; Secretary, Dr. Lemuel C. McGee, Wilmington, Del.; Delegate, Dr. Rutherford T. Johnstone, Los Angeles; Alternate Delegate, Dr. O. A. Sander, Milwaukee; Representative to the Scientific Exhibit, Dr. Paul A. Davis, Akron, Ohio.

The Section sponsored 15 exhibits in the Scientific Exhibit. Three exhibits received awards, one a certificate of merit and two an honorable mention.

SECTION ON RADIOLOGY

The Section on Radiology held four meetings, three of which were joint sessions with other Sections. On Tuesday afternoon, June 9, the Section met in Borton Hall, Dennis Hotel, for a symposium on esophageal hiatal hernia with the Sections on Diseases of the Chest and on Gastroenterology and Proctology. On Wednesday morning, June 10, there was a joint session on gastric ulcer in Trimble Hall, Claridge Hotel, with the Sections on Gastroenterology and Proctology, and on Pathology and Physiology. On Wednesday afternoon the Section met with five other Sections for the symposium and panel discussion on hepatic diseases. At the final meeting on Thursday afternoon, June 11, in the Ballroom, Shelburne Hotel, eight papers were read.

At the business meeting on Thursday, the following officers were elected: Chairman, Dr. Sydney F. Thomas, Palo Alto, Calif.; Vice-chairman, Dr. J. Paul Medelman, St. Paul, Minn.; Secretary, Dr. Traian Leucutia, Detroit; Delegate, Dr. Eugene P. Pendergrass, Philadelphia; Alternate Delegate, Dr. Wendell G. Scott, St. Louis; and Representative to the Scientific Exhibit, Dr. Richard H. Chamberlain, Philadelphia.

The Section sponsored 14 exhibits in the Scientific Exhibit. Two received awards, one a certificate of merit and one an honorable mention.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

The Section on Surgery, General and Abdominal, met in Trimble Hall, Claridge Hotel, on Tuesday, Wednesday, and Thursday afternoons, June 9, 10, and 11. Fifteen papers were presented. The Section celebrated its one hundredth anniversary on Wednesday with a program devoted to the development of surgery in the United States.

At the business meeting, on Thursday, reports were heard from the Section Secretary and Delegate. A report of the representative to the American Board of Surgery was presented by the Section Secretary. A resolution was passed, asking that the name of the Section on Surgery, General and Abdominal, be changed to the Section on Surgery.

The following officers were elected: Chairman, Dr. Champ Lyons, Birmingham, Ala.; Vice-chairman, Dr. Gustaf E. Lindskog, New Haven, Conn.; Secretary, Dr. Edwin H. Ellison, Milwaukee; Delegate, Dr. Grover C. Penberthy, Detroit; Alternate Delegate, Dr. R. Russell Best, Omaha; and Representative to the Scientific Exhibit, Dr. Julian Johnson, Philadelphia.

The Section sponsored 27 exhibits in the Scientific Exhibit. Four exhibits received awards, consisting of the Hektoen Gold Medal, one certificate of merit, and two honorable mentions.

SECTION ON UROLOGY

The Section on Urology met on Wednesday, Thursday, and Friday mornings, June 10, 11, and 12 in Borton Hall, Dennis Hotel, when 17 papers were presented. In addition, there was a joint session on Wednesday afternoon with the Section on Pediatrics, at which six papers were read.

At the business meeting, on Thursday, reports were heard from the Section Secretary, Delegate, and Assistant Representative to the Scientific Exhibit. The Section deplored the fact that space for section exhibits had been curtailed and urged that the situation be corrected another year. It was voted to replenish the fund in support of the John H. Morrissey Award, and donations were received for this purpose. A motion was passed to present a certificate to each retiring chairman, the cost to come from the John H. Morrissey Fund. It was also voted to send a newsletter to members of the Section, and the Secretary was directed to investigate possibilities for this arrangement.

The following officers were elected: Chairman, Dr. Thomas A. Morrissey, New York; Vice-chairman, Dr. Harry Spence, Dallas, Texas; Secretary, Dr. Edward H. Ray, Lexington, Ky.; Asst. Secretary, Dr. Myron H. Nourse, Indianapolis; Delegate, Dr. Jay J. Crane, Los Angeles; Alternate Delegate, Dr. Earl Ewert, Boston; and Representative to the Scientific Exhibit, Dr. E. F. Poutasse, Cleveland; Assistant Representative to the Scientific Exhibit, Dr. Dean Parker, Seattle.

The Scientific Exhibit contained 13 exhibits sponsored by the Section; two exhibits received awards, one a certificate of merit and one an honorable mention. In addition, the Section presented the John H. Morrissey Award to Dr. Guy W. Leadbetter, Jr., Massachusetts General Hospital, Boston, for his exhibit on Renal Artery Replacement.

SECTION ON MISCELLANEOUS TOPICS

Three groups presented programs in the Section on Miscellaneous Topics. On Tuesday afternoon, June 9, a session on cutaneous facial disfigurements was presented under the auspices of the Committee on Cosmetics of the American Medical Association. Six papers were presented.

On Wednesday morning and afternoon, June 10, four panel discussions and one paper on the new concepts in aging were presented under the auspices of the Committee on Aging, Council on Medical Service of the American Medical Association.

On Thursday afternoon, June 11, a session on allergy was presented under the auspices of the American College of Allergists and the American Academy of Allergy.

There were 14 exhibits in the Scientific Exhibit of the Section on Miscellaneous Topics, but they were not correlated with the papers read in this Section, except in one instance. One certificate of merit was awarded.

REPORT OF THE COMMITTEE ON AWARDS FOR THE SCIENTIFIC EXHIBIT, ATLANTIC CITY, 1959

The Committee on Awards has made the following report of the awards given in the Scientific Exhibit at the 1959 Annual Meeting of the American Medical Association.

Hektoen Medal

Hektoen medals, presented to exhibits of original investigation judged on the basis of originality and excellence of presentation, were awarded as follows:

Gold Medal.—Oscar Creech, Jr., E. T. Krementz, R. F. Ryan, Keith Reemtsma, J. N. Winblad, and James L. Elliott, Tulane University School of Medicine, Charity Hospital, Touro Infirmary, and U. S. Public Health Hospital, New Orleans, for the exhibit on Treatment of Cancer by Perfusion.

Silver Medal.—James L. Tullis, L. L. Haynes, Hugh Pyle, Stanley Wallach, Robert Pennell, Mary T. Sproul, and A. Kroubesserian, Protein Foundation and U. S. Naval Hospital, Boston, for the exhibit on Clinical Use of Frozen Red Cells.

Bronze Medal.—Arild E. Hansen, Hilda F. Wiese, Arr Nell Boelsche, Mary Ellen Haggard, Doris J. D. Adam and Helen Davis, University of Texas School of Medicine, Galveston, Texas, for the exhibit on Linoleic Acid in Infant Feeding: Significance of Linoleic Acid in the Diet of Infants.

Billings Medal

Billings medals, presented to exhibits judged on the basis of excellence of correlation of facts and presentation rather than upon experimental studies, were awarded as follows:

Gold Medal.—J. Brown Farrior and Robert L. Levine, Tampa, Fla., for the exhibit on Ear Surgery in 3-D; Tympanoplasty, Stapes and Fenestration.

Silver Medal.—Arnold P. Friedman, Charles A. Carton, and Asao Hirano, Montefiore Hospital, Bronx, N. Y., for the exhibit on Facial Pain.

Bronze Medal.—Philip Schwartz, Warren State Hospital, Warren, Pa., for the exhibit on Cerebral Apoplexy: Types, Causes and Pathogenesis.

Section Awards

Certificates of Merit and Honorable Mention were awarded to the following exhibits in each section.

Section on Anesthesiology

Certificate of Merit to John Adriani and Otha Horace Yarberry, Charity Hospital and Louisiana State University School of Medicine, New Orleans, for the exhibit on Preanesthetic Medication: Old and New Concepts.

Honorable Mention to Barnett A. Greene, Samuel Berkowitz, Bernard S. Goffen, Bryce C. Anthony, Joseph R. Stein, and Joseph Katz, Adelphi Unit, Brooklyn Women's and Cumberland Hospitals, Brooklyn, N. Y., for the exhibit on Emetogenic and Antiemetic Factors and Drugs in Anesthesiology: A Simple Test Method for the Study in Man.

Section on Dermatology

Certificate of Merit to Harvey Blank, Frank J. Roth Jr., and J. Graham Smith Jr., University of Miami School of Medicine, Miami, Fla., for the exhibit on Systemic Treatment of Dermatomycoses with Griseofulvin.

Honorable Mention to Francis H. McMullan, Medical College of Virginia, Richmond, Va., for the exhibit on Basal Cell Tumors: A Classification Based on Histiogenesis.

Honorable Mention to William J. Brown, Ad Harris, W. E. Deacon, and V. H. Falcone, Communicable Disease Center, Public Health Service, Atlanta, Ga., for the exhibit on Fluorescent Treponemal Antibody Test for Syphilis.

Section on Diseases of the Chest

Certificate of Merit to Samuel H. Rosen, Armed Forces Institute of Pathology, Washington, D. C., Benjamin Castleman, Massachusetts General Hospital, Boston, and Averill A. Liebow, Yale University School of Medicine, New Haven, Conn., for the exhibit on Pulmonary Alveolar Proteinosis—A New Entity.

Honorable Mention to Richard T. Cathcart, William Fraimow, and Peter A. Theodos, Jefferson Medical College Hospital, Philadelphia, for the exhibit on Anthracosilicosis: Selected Aspects Related to the Evaluation of Disability, Cavitation, and the Unusual X-ray.

Section on Experimental Medicine and Therapeutics

Certificate of Merit to Marvin J. Seven and L. Audrey Johnson, Hahnemann Medical College, Philadelphia, for the exhibit on Metal-Binding in Medicine.

Honorable Mention to S. William Simon, Veterans Administration Center, Dayton, Ohio, for the exhibit on Tests for Oral Drug Utilization.

Honorable Mention to Edwin A. Mirand, D. T. Mount, G. E. Moore, J. T. Grace, and J. E. Sokal, Roswell Park Memorial Institute, Buffalo, for the exhibit on The Study of Viruses in Cancer.

Section on Gastroenterology and Proctology

Certificate of Merit to James L. A. Roth, A. Valdes-Dapena, George N. Stein, and H. L. Bockus, Graduate Hospital and Graduate School of Medicine of the University of Pennsylvania, Philadelphia, for the exhibit on Life History of Nonspecific Ulcerative Colitis: Relation of Anatomical Types and Clinical Course in Prognosis.

Honorable Mention to H. Mark Young, The Young Foundation for Medical Research, Los Angeles, for the exhibit on The Glomus Story.

Honorable Mention to J. Alfred Rider and Hugo C. Moeller, John O. Gibbs, Lourdes Accaoli, Jennie Lee, Beatrice Berteau, and Joyce Swader, University of California Medical Center, San Francisco, for the exhibit on Pathophysiology, Diagnosis and Treatment of Esophageal Diseases.

Section on General Practice

Certificate of Merit to Robert B. Greenblatt and Kenneth R. Baldwin, Medical College of Georgia, Augusta, Ga., for the exhibit on The Polycystic Ovary Syndrome.

Honorable Mention to J. Scott Butterworth and Edmund H. Reppert, New York University Postgraduate Medical School, New York, for the exhibit on Is Cardiac Auscultation a Lost Art?

Section on Internal Medicine

Certificate of Merit to L. G. Bartholomew, J. C. Cain, G. D. Davis, and A. H. Bulbulian, Mayo Clinic and Mayo Foundation, Rochester, Minn., for the exhibit on Misleading Calcific Shadows in the Abdomen.

Honorable Mention to Richard E. Peterson, Richard L. Lawton, and Donald V. Walz, Veterans Administration Hospital, Iowa City, for the exhibit on Uses and Abuses of Blood Transfusions.

Honorable Mention to Jan Nyboer and Alan Baker, Harper Hospital, Detroit, for the exhibit on Pulse Volume and Blood Volume Flow from Electrical Conductances: Radio-Frequency Impedance Plethysmography.

Section on Laryngology, Otology, and Rhinology

Certificate of Merit to Joel J. Pressman, Mildred B. Simon, and Walter Berman, City of Hope National Medical Center, Duarte, and University of California at Los Angeles School of Medicine, Los Angeles, for the exhibit on Primary Repair of Defects Following Removal of Tumors of the Face.

Honorable Mention to Chevalier L. Jackson, John V. Blady, Charles M. Norris, Robert Robbins, and Ernest L. McKenna, Temple University Medical Center, Philadelphia, for the exhibit on Cancer of the Larynx and Hypopharynx: A Study of the Application of Classification and Staging.

Section on Military Medicine

Certificate of Merit to Otis O. Benson, Paul Campbell, and Irving B. Davis, School of Aviation Medicine, U. S. Air Force, Randolph Air Force Base, Texas, for the exhibit on Space Medicine Research.

Honorable Mention to Richard L. Bernstine and James H. Nelson Jr., U. S. Naval Hospital, St. Albans, N. Y., for the exhibit on Retrograde Femoral Arteriography in Obstetrics and Gynecology.

Section on Nervous and Mental Diseases

Certificate of Merit to Paul M. Ellwood Jr., Elizabeth Kenny Institute and University of Minnesota Medical School, Minneapolis, for the exhibit on Neurological Examination of Infants.

Section on Obstetrics and Gynecology

Certificate of Merit to Harold A. Kaminetzky, E. McGrew, R. Phillips, O. Saphir, M. Leventhal, and T. Kline, University of Illinois College of Medicine and Michael Reese Hospital, Chicago, for the exhibit on Cervical Epithelial Dysplasia—Experimentally Produced.

Honorable Mention to Michael J. Jordan, Genevieve M. Bader, and Emerson Day, Memorial Center for Cancer and Allied Diseases, New York, for the exhibit on Management of Atypical Lesions of the Cervix.

Section on Ophthalmology

Certificate of Merit to Gilbert Baum and Ivan Greenwood, Veterans Administration Hospital, Bronx, N. Y., and National Institutes of Health, Washington, D. C., for the exhibit on Application of Ultrasonic Locating Techniques to Ophthalmology.

Honorable Mention to Theodor Wanko, National Institutes of Health, Bethesda, Md., for the exhibit on The Crystalline Lens.

Honorable Mention to Mansour F. Armaly, State University of Iowa College of Medicine, Iowa City, for the exhibit on Intraocular Effects of the Parasympathetics in the Cat: Morphology and Fluid Dynamics.

Section on Orthopedic Surgery

Certificate of Merit to James A. Nicholas, Philip D. Wilson, and Robert H. Freiberger, Hospital for Special Surgery, The New York Hospital-Cornell Medical Center, New York, for the exhibit on A Clinical Study of Demineralizing Bone Disease.

Honorable Mention to J. I. Kendrick, George S. Phalen, and L. J. McCormack, Cleveland Clinic, Cleveland, for the exhibit on Benign Soft Tissue Tumors of the Hand.

Section on Pathology and Physiology

Certificate of Merit to Hans Elias and John E. Pauly, Chicago Medical School, Chicago, for the exhibit on The Adrenal Cortex in Health and Disease.

Honorable Mention to Erving F. Geever, Harold L. Upjohn, and Stanley M. Levenson, Walter Reed Army Institute of Research, Washington, D. C., for the exhibit on The Microscopic Pathology of Collagen Inhibition in Experimental Scurvy.

Section on Pediatrics

Certificate of Merit to Theodore H. Ingalls and Francis J. Curley, University of Pennsylvania School of Medicine, Philadelphia, for the exhibit on Congenital Anomalies: Experimental Production of Cranioschisis.

Honorable Mention to Anthony A. Albanese, Reginald A. Higgons, and Louise A. Orto, St. Luke's Hospital, New York, and St. Luke's Convalescent Hospital, Greenwich, Conn., for the exhibit on Amino Proteins and Their Utilization by Young Children.

Section on Physical Medicine

Certificate of Merit to Earl F. Hoerner, Joseph B. Rogoff, and Jerome S. Tobis, New York Medical College, New York, for the exhibit on Pain Weakness: Electrodiagnostic Evaluation.

Honorable Mention to Charles D. Bonner, Holy Ghost Hospital Rehabilitation Unit, Cambridge, Mass., for the exhibit on Muscle Rehabilitation by Local Steroid Therapy and Sling Suspension.

Section on Preventive Medicine

Certificate of Merit to John C. Pruitt, Albert W. Hilberg, Raymond F. Kaiser, Richard A. Malmgren, and John F. Potter, National Cancer Institute, Bethesda, Md., for the exhibit on Studies of Cancer Cells in Circulatory Blood.

Honorable Mention to Peter Hamill, U. S. Public Health Service, Washington, D. C., for the exhibit on Air Pollution Is a Nationwide Problem.

Honorable Mention to Howard A. Buechner, Jordan Thompson, and Oscar Blitz, Veterans Administration Hospital, New Orleans, for the exhibit on Bagassosis: A Medical Enigma.

Section on Radiology

Certificate of Merit to Robert S. Sherman and Daniel Wilner, Memorial Center for Cancer and Allied Diseases, New York, for the exhibit on Roentgen Problems in Paget's Disease.

Honorable Mention to Emanuel Salzman, R. P. Spurck, L. C. Kier and D. H. Watkins, Denver General Hospital and the University of Colorado School of Medicine, Denver, for the exhibit on Opacifying Gallstones.

Section on Surgery, General and Abdominal

Certificate of Merit to E. Stanley Crawford, Michael E. De Bakey, William S. Fields, Denton A. Cooley and George C. Morris Jr., Baylor University College of Medicine, Houston, Texas, for the exhibit on Surgical Considerations in Treatment of Cerebral Arterial Insufficiency.

Honorable Mention to James S. Clarke, Paul K. McKissock, Ira Miller, and Kenneth Cruze, Veterans Administration Center, Los Angeles, for the exhibit on Peptic Ulcer in Cirrhosis and After Portacaval Shunt.

Honorable Mention to O. H. Beahrs, K. D. Devine, and L. B. Woolner, Mayo Clinic and Mayo Foundation, Rochester, Minn., for the exhibit on Tumors of the Parotid Gland: Their Surgical Management.

Section on Urology

Certificate of Merit to Hans H. Zinsser and Clifford Wahlberg, Columbia University College of Physicians and Surgeons, New York, for the exhibit on Urease Inhibitors in Urological Infections: Stone Prevention and Resistance Changes.

Honorable Mention to John W. Draper, Michael Sierp, Paul Braunstein, and William Samellas, Bellevue Hospital and Cornell University Medical College, New York, for the exhibit on The Stimulation of Callus Formation in Fractures by Interposed Urothelium.

Section on Miscellaneous Topics

Certificate of Merit to Henry D. Ogden, New Orleans, and Marvin Fuchs, Washington, D. C., for the exhibit on Basic Fundamentals in the Treatment of Asthma.

Exhibit Symposium on Arthritis and Rheumatism

Certificate of Merit to John H. Talbott and Donald M. Wilson, University of Buffalo School of Medicine and Buffalo General Hospital, Buffalo, for the exhibit on Gout and Blood Dyscrasias.

Exhibit Symposium on Diabetes

Certificate of Merit to Howard F. Root, Elliott P. Joslin, Alexander Marble, Priscilla White, Allen P. Joslin, Robert F. Bradley, and Leo P. Krall, Joslin Clinic, Boston, for the exhibit on Diabetes Mellitus Today.

Medical Photography

A Certificate of Merit is awarded to William Atkinson, University of Miami School of Medicine, for his work on medical photography in the exhibit on Systemic Treatment of Dermatomycoses with Griseofulvin.

Honorable Mention is given to Thomas J. Lannon, Cleveland Clinic, Cleveland, for his work on medical photography in the exhibit on Serotonin Sensitivity in Rheumatoid Arthritis and Related Diseases.

Medical Illustration

A Certificate of Merit is awarded to Leonard D. Dank, New York, for his work on medical illustration in the exhibit on The Red Eye, Diagnosis and Treatment.

Honorable Mention is given to Will Symmes and Ralph Sweet, San Francisco, for their work on medical illustration in the exhibit on Pathophysiology, Diagnosis and Treatment of Esophageal Diseases.

Certificates of Appreciation

Certificate of Appreciation to Gordon M. Wyant and Allen B. Dobkin, University of Saskatchewan College of Medicine, Saskatoon, Sask., Canada, for the exhibit on Physiologic Effects of Intravenous Anesthesia.

Certificate of Appreciation to Andrew Muir, Lanark, Scotland, for his exhibit on Aspirin and the Stomach.

Comments

The Committee on Awards wishes to thank all of the scientific exhibitors for their contribution to graduate medical education and the Section Representatives for their assistance.

The members of the Committee on Awards included Drs. Frank P. Foster, Boston, Chairman; Lester R. Dragstedt, Chicago; Rubin H. Flocks, Iowa City; Everett C. Fox, Dallas, Texas, and Sam H. Sanders, Memphis, Tenn.

MEDICAL NEWS

ARIZONA

General Practice Meeting in Scottsdale.—The American Academy of General Practice, Arizona Chapter, will meet Oct. 15-17 at the Hotel Valley Ho, Scottsdale. A panel discussion, "Cutaneous Medicine," will be conducted the morning of Oct. 17, with Dr. William E. Ragsdale Jr., Phoenix, presenting, "Malignancy of the Skin," and Dr. Walter W. Wilson, Coeur D'Alene, Idaho, giving, "Griseofulvin, a New Oral Treatment for Ringworm." Twelve other papers are scheduled, including "Caution, Curves Ahead," by Mr. Mac F. Cahal, executive director of the academy. Exhibits are planned. For information, write Dr. Arthur V. Dudley Jr., 1524 N. Norton, Tucson, Ariz., Convention Chairman.

CALIFORNIA

General Practice Meeting in Los Angeles.—The California Academy of General Practice will meet Oct. 11-14, at the Hotel Statler, Los Angeles. Over 20 papers are scheduled, including the following special lectures:

Clinical Use and Technique of Hypnosis, Dr. Milton H. Erickson, Phoenix, Ariz. (Stanley R. Truman Lecture).
Diagnosis and Treatment of Hypertension, Dr. James B. Donaldson, Philadelphia (Hodges Memorial Lecture).
The Use of Steroids in Arthritis, Dr. Philip S. Hench, Rochester, Minn. (Ivan C. Heron Lecture).

A panel discussion, "Modern Treatment of Carcinoma of the Breast," will be moderated by Dr. Forrest M. Willett, San Francisco. Technical exhibits are planned.

COLORADO

Dr. Newman Comes to Denver.—Dr. Melvin M. Newman resigned as associate professor of surgery at the State University of New York Downstate Medical Center, Brooklyn, Sept. 30 to accept the post of director of surgery at the National Jewish Hospital, Denver. Dr. Newman came to the downstate center's department of surgery in July, 1954, as assistant professor. He has been in charge of the university's thoracic surgery service at the Kings County Hospital for several years.

Personal.—Dr. Juan A. del Regato, director of the Penrose Cancer Hospital, Colorado Springs, has been elected president of the section on radiotherapy of the Pan American Medical Association, which will hold its 35th anniversary congress in Mexico City, May 2-11, 1960.——Dr. Robert J. Glaser, dean and professor of medicine, University of Colorado School of Medicine, Denver, was recently named vice-president for medical affairs at the university. He will continue to serve as dean of the School of Medicine.

DISTRICT OF COLUMBIA

Personal.—Dr. Vane M. Hoge was appointed assistant director of the Washington Service Bureau of the American Hospital Association. Dr. Hoge resigned as executive director of the Hospital Planning Council for Metropolitan Chicago to accept the AHA appointment, which was effective July 1.——In June, Dr. Lawrence S. Lilienfield, assistant professor of medicine, Georgetown University School of Medicine, was made a fellow of the American Association for the Advancement of Science, was elected president of the D. C. Chapter of the American Federation for Clinical Research, and was appointed councillor of the eastern section of the federation.——The speaker for the annual Lewis Harvey Taylor Lecture of the American Therapeutic Society was Dr. Edward P. Freis, associate professor of medicine, Georgetown University School of Medicine, who spoke before the society June 7, at Atlantic City.

ILLINOIS

Dr. Camp Honored.—The Warren County Medical Society and the Monmouth Medical Club on Sept. 24 honored Dr. Harold M. Camp, of Monmouth, secretary-treasurer of the Illinois State Medical Society. The occasion marked Dr. Camp's 50 years as a physician. A dinner was held in Grier Hall of Monmouth College and a program was arranged by Dr. Charles P. Blair, of Monmouth, president of the Warren County Medical Society. Dr. Camp, following his graduation from Northwestern University Medical School in 1909, entered practice in Monmouth. In 1924 he was elected secretary of the state society.

Chicago

Dr. Adams Named Surgery Chairman.—Dr. William E. Adams, Raymond Professor of Surgery at the University of Chicago, was appointed chairman of the department of surgery at that institution, effective Aug. 1. Dr. Adams is president of the American Association for Thoracic Surgery and a councilor of the Illinois State Medical Society.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

Orthopedic Meeting in Chicago.—The Chicago Orthopaedic Society will meet Oct. 9 at the Palmer House, with Dr. Charles F. Woodhouse, Chicago, presenting "Arterial Transplant into Bone." Dr. Carlo S. Scuderi, Chicago, will give "Present Status of Orthopaedic Surgery in Italy." All physicians are invited. For information, write Dr. Jerome G. Finder, 111 N. Wabash Ave., Chicago 2, Secretary.

Medical History Meeting.—There will be a meeting of the Society of Medical History of Chicago at the Institute of Medicine (fourth floor, 86 E. Randolph St.) on Wednesday, Oct. 14, 8 p. m. This is an open meeting. Dr. George V. LeRoy, associate dean of the biological sciences, University of Chicago, will present, "On the Asthma." Ilza Veith, Ph.D., associate professor, department of the history of medicine, University of Chicago, and president of the society, will present, "A Medical Historian in Japan."

Dr. Spaeth to Speak at Annual Luncheon.—The annual luncheon of Michael Reese Hospital Eye Alumni Oct. 13 at the Stanford Club in Chicago, will highlight the achievements of the late Dr. Henry S. Gradle, who headed the department of ophthalmology at the medical center from 1925 to 1950. Guest speaker is Dr. Edmund B. Spaeth, of Philadelphia, who will review Dr. Gradle's contributions to eye research and surgery as well as to international medical relations, notably in the founding of the Pan-American Academy of Ophthalmology in 1940. The luncheon is a yearly event held in connection with the American Academy of Ophthalmology and Otolaryngology, which meets this year Oct. 12-17 in Chicago. It is open to all interested Reese interns as well as former eye residents and nurses associated with the hospital or with Dr. Gradle.

INDIANA

State Convention in Indianapolis.—The 110th convention of the Indiana State Medical Association will be held Oct. 6-9 at the Murat Temple, Indianapolis. Dr. Kenneth L. Olson, South Bend, president of the association will open the first general meeting. Papers to be presented by out-of-state speakers are as follows:

Cancer of the Breast, Dr. George Crile Jr., Cleveland.
Hypophysectomy in the Treatment of Advanced Cancer of the Breast, Dr. Bronson S. Ray, New York.
Problem of Ovarian Cysts, Dr. J. Donald Woodruff, Baltimore.
Hyperfunctioning Lesions of the Adrenal Glands, Dr. James T. Priestly, Rochester, Minn.
Pituitary Tumors, Dr. Ray.
Surgical Anatomy of the Colon and Rectum, Dr. C. Naunton Morgan, London, England.
Ulcerative Colitis, Dr. Charles W. Mayo, Rochester, Minn.
The Tired Mother Syndrome, Dr. Leonard L. Lovshin, Cleveland.
Convalescence Following Illness and Surgery, Dr. N. Henry Moss, Philadelphia.
General Considerations in the Use of Steroids, Dr. Robert M. Salassa, Rochester, Minn.
Carcinoma of the Lower Colon and Upper Rectum, Dr. Mayo.
The Treatment and Care of Imperforate Anus, Dr. Arthur DeBoer, Chicago.

The speaker at the annual dinner Oct. 7, 7 p. m. will be Carl Winters, Ph.D., public relations department, General Motors Corporation, Detroit. The program is approved for category II credit by the Indiana Academy of General Practice, and instruction courses are approved for category I. A trap-skeet shoot and a golf tournament are planned. For information write Mr. James A. Waggener, 1021 Hume Mansur Building, Indianapolis 4, Executive Secretary.

LOUISIANA

Symposium on Lipid Metabolism.—The Tulane University School of Medicine and the National Vitamin Foundation will present a Symposium on the Role of Vitamins and Other Nutrients in Lipid Metabolism, to be held on the Tulane Campus, New Orleans, Oct. 16. Factors thought to be involved in the production or possible prevention of atherosclerosis will be covered, among them fatty acids, cholesterol, vitamin B_6, nicontinic acid, and vitamin E. Information regarding the symposium may be obtained from Dr. Grace A. Goldsmith, Tulane University of Louisiana School of Medicine, New Orleans, or The National Vitamin Foundation, Inc., 149 E. 78th St., New York 21.

General Practice Meeting.—The Louisiana Academy of General Practice will hold its 13th annual scientific assembly on Oct. 20-22 at the Capitol House in Baton Rouge, Dr. Francis I. Nicolle, of New Orleans, secretary of the organization, announced. The Congress of Delegates of the academy will be in session on the morning of Oct. 20. Speaker of the congress is Dr. Eldredge L. Carroll, of Columbia, and vice-speaker is Dr. John G. McClure, of Welsh. The scientific sessions will begin on the afternoon of Oct. 20. Dr. Esmond A. Fatter, New Orleans, will preside at the opening session. The Wednesday morning session will have Dr. Joseph W. Crookshank, of Lake Charles, president-elect, as its presiding officer and on Wednesday afternoon Dr. Julius W. Daigle, of Paincourtville, immediate past-president, will be in charge of the session. The scientific portion of the program has been accepted for 11 hours of category I credit by the American Academy of General Practice. Speakers will include Dr. Nicholas J. Chetta, New Orleans; Dr. Carl A. Nau Jr., Galveston, Texas; Dr. Vincent P. Collins, Houston; Dr. Joseph A. Sabatier Jr., Baton Rouge; Dr. Robert I. Wise, Philadelphia; Dr. Philip Thorek, Chicago; Dr. Irving Redler, New Orleans. Dr. David L. Markstein, investment counsellor and seminar lecturer at Loyola University in New Orleans, will present "Dangers and Profits in Investing in the World of Tomorrow." Two medical films will complete the scientific program. On Wednesday, Oct. 21, the Louisiana academy will hold its annual installation dinner. Sixty pharmaceutical and allied companies will present technical exhibits during the meeting.

MARYLAND

Symposium on Prenatal Nutrition.—The role of maternal nutrition in the production of congenital malformations and reproductive failure will be stressed at a symposium scheduled for Oct. 16-17 at the Johns Hopkins Hospital in Baltimore. The Symposium on Prenatal Nutrition will cover such topics as protein nutrition in pregnancy, metabolism of iron, vitamin B_{12} and folic acid in pregnancy, and genetics and vitamin B_{12} deficiency. For information write Bacon F. Chow, Ph.D., Associate Professor, Department of Biochemistry, the Johns Hopkins University School of Hygiene and Public Health, Baltimore, or Dr. Nicholson J. Eastman, Professor of Obstetrics and Gynecology, the Johns Hopkins University School of Medicine, Baltimore.

MASSACHUSETTS

Symposium on Disability and Comprehensive Medicine.—The Liberty Mutual Insurance Company will sponsor a symposium, "The Growing Challenge of Disability Control in an Era of Comprehensive Medical Care," Oct. 15-16 at the John Hancock Hall and Hotel Sheraton-Plaza, Boston. Panel discussions and moderators are planned as follows: "Cardiac Disability," Dr. Paul Dudley White, Boston; "Psychological Complications in Disability," Dr. Carl A. L. Binger, Cambridge; and "Connective Tissues and the Degenerative Diseases of Aging," Francis O. Schmitt, Ph.D., Massachusetts Institute of Technology. The program includes the following papers:

Industrial Management's Role in the Control of Disability, Mr. Edward J. Sullivan, Turner Construction Co.
The Role of Insurance in the Control of Disability, Mr. S. Bruce Black, Liberty Mutual Insurance Co.
The Socio-Economic Responsibilities of Medicine, Dr. Gunnar A. Gundersen, La Crosse, Wis., Past-President, American Medical Association.
The Economic Challenges in Disability Control, Mr. George Bugbee, president, Health Information Foundation.
Labor's Role in the More Effective Control of Disability, Mr. Jerome Pollack, Detroit.
The Role of the Bar and the Judiciary in Controlling Disability, Mr. David W. Peck, New York City.
Government's Role in the Control of Disability, Miss Bertha S. Adkins, Washington, D. C.

MICHIGAN

Center for Medical Research.—Dow Corning Corporation announced the founding of the Dow Corning Center for Aid to Medical Research Aug. 14. In making the announcement, Mr. R. W. Collings, president, said, "the purpose of the center will be to aid medical research by supplying technical assistance by acting as a clearing-house for information about the use of silicones in medicine and surgery, and by cooperating in research in organosilicon chemistry in relation to the human body." Offices of the new center will be at Midland. The director will be Rob Roy McGregor, Ph.D., and the executive secretary Mr. Silas A. Braley. Dr. McGregor has been a member of the research team of Dow Corning since its founding in 1943. The new facility will serve as a communication center, Dr. McGregor said, "to answer inquiries about the medical uses of silicones, to collaborate on solving technical problems, and to report on work in progress. There will be no charge for this service."

Annual Meeting on Blood Banks.—The 5th annual meeting of the Michigan Association of Blood Banks will be held Oct. 10 at the David Whitney House, headquarters of the Wayne County Medical Society, Detroit. Dr. Ralph M. Hartwell, New Orleans, president, American Association of Blood Banks, will moderate the morning session at which Dr. Elmer R. Jennings, president of the Michigan association, will present an address. The program includes the following papers:

Medicolegal Aspects of Operating a Blood Bank, Frederick J. Buesser Jr., LL.B., Detroit.
Drug Dependent Positive Coombs Test, Dr. Ernest E. Muirhead, Detroit.
Quantitative Aspects of Anti-Rh Inhibition, Emanuel Hackel, Ph.D., East Lansing.
Blood Bank Problems Relating to Open Heart Surgical Procedures, Dr. William J. Kuhns, Pittsburgh.
Studies on Survival of Platelets and Erythrocytes, Dr. Max M. Strumia and Dr. Paul V. Strumia, Bryn Mawr, Pa.
Screening of Hemorrhagic Disorders for the Small Laboratory, Lee A. Hyndman, Ph.D., Lansing.
Use of Fluorescent Antibodies in the Detection of Minor Erythrocyte Populations, Dr. Flossie Cohen, Dr. Wolf W. Zuelzer, and Margaret Evans, M.S., Detroit.

A round-table luncheon is planned. For information, write Dr. Frank R. Ellis, Chairman, Program Committee, 1010 Antietam St., Detroit 7.

MINNESOTA

Personal.—Dr. Frank H. Krusen, Rochester, who founded the Section of Physical Medicine and Rehabilitation of the Mayo Clinic in 1935, was appointed special assistant for health and medical affairs to the director of the Office of Vocational Rehabilitation of the Department of Health, Education, and Welfare. Dr. Krusen will assume the new post about Sept. 15.——Dr. S. Marx White, of Minneapolis, was awarded Northwestern University Alumni Association's merit award "in recognition of worthy achievement which has reflected credit upon Northwestern University." Dr. White, one of the founders of the Nicollet Clinic, received his medical degree from Northwestern in 1897.

MONTANA

Society News.—The Montana Chapter of the American Academy of General Practice installed Dr. Harry R. Soltero, Billings, as president to succeed Dr. Amos R. Little Jr., Helena, Dr. Philip D. Pallister, Boulder, was named president-elect and Dr. Paul J. Seifert, Libby, vice-president. Dr. Vernon D. Standish, Big Timber, was reelected secretary-treasurer.——At the annual conference of the Montana Rehabilitation Association in Billings, during June, Dr. James A. Shown, Great Falls, was named president-elect, succeeding Mr. John J. Earls, Helena, was installed as president for the forthcoming year. Dr. Jess T. Schwidde, Billings, is immediate past-president of the association.

NEW JERSEY

Symposium on Lipids and Diabetes.—The New Jersey Diabetes Association in cooperation with the New Jersey State Department of Health will present its seventh annual Symposium on Lipids and Diabetes in Newark Oct. 21. Four papers are scheduled as follows:

Fat: Its Relationship to the Treatment of Diabetes, Dr. Leo P. Krall, Boston.
Some Aspects of Lipid Metabolism in Relation to Atherosclerosis, Dr. Herbert J. Kayden, New York City.
Effects of Fatty Infiltration of the Liver upon Sensitivity to Insulin Action, Michael Somogyi, Ph.D., St. Louis.
Fat: Liver and Diabetes, Dr. Carroll M. Leevy, Jersey City.

A panel discussion, "Lipids and Diabetes," will be moderated by Dr. Garfield G. Duncan, Philadelphia. President of the New Jersey Diabetes Association is Dr. William Levison. Members of the American Academy of General Practice will receive three hours credit under category II for attendance.

NEW YORK

Center for Arthritis Evaluation.—Two March of Dimes research grants totaling $145,080 have been awarded to the University of Rochester School of Medicine and Dentistry to establish a model arthritis evaluation and demonstration center, and to study blood factors as a clue to rheumatoid arthritis. The two research projects will be directed by Dr. Ralph F. Jacox, associate professor of medicine, who will conduct the arthritis evaluation and demonstration center, and Dr. John H. Vaughan, associate professor of medicine, who will direct the study of blood factors. The arthritis center in Rochester will be located in the University of Rochester Medical Center with its two affiliated teaching hospitals, the Strong Memorial Hospital and Rochester Municipal Hospital. It will have complete resources for diagnostic, orthopedic, pediatric, psychiatric, and social service care of patients with arthritis. The center will have triple functions of care, education, and research as related to rheumatic diseases. The new center will offer outpatient treatment primarily. However, hospital beds will be available for in-patient treatment when necessary. The program under the university grant will be administered by the department of medicine.

Personal.—The retirement of Dr. Morton L. Levin, Albany, as assistant commissioner for medical services was announced. Dr. Levin, associated with the New York State Health Department since 1936, is a former president of the Public Health Cancer Association and the New York State Epidemiological Society.——Appointment of Dr. Loftus L. Bryan, Marcy, as assistant commissioner in the State Department of Mental Hygiene was announced. He has been acting commissioner since Dec. 4, 1958. Dr. Bryan will be in charge of the division of in-patient services, having responsibility for the administration of occupational therapy, nursing, recreational and safety services, and for medical inspection of all state and licensed mental institutions.——Dr. Thomas L. Hawkins Jr., of the Albany Medical College faculty, was awarded a special fellowship by the Nathan Hofheimer Foundation, New York, to undergo advanced training in hematology. Dr. Hawkins has gone to Salt Lake County General Hospital and the University of Utah College of Medicine, Salt Lake City, where he will spend 10 months studying clinical and experimental hematology under Dr. Maxwell M. Wintrobe and Dr. George E. Cartwright.

New York City

Director Named for Radioactivity Laboratory.—Mr. Merril Eisenbud was appointed professor of industrial medicine at New York University Post-Graduate School of Medicine and will assume direction of a new laboratory concerned with the study of long-range effects of radioactivity on man to be established at the Medical Center. The laboratory will be a unit of the Institute of Industrial Medicine, of which Norton Nelson, Ph.D., is director. Organization of the radiation study was made possible by a 10-year grant from the Rockefeller Foundation. The objective of the project will be the evaluation and prevention of radiation hazards for the general population as well as in industry. Professor Eisenbud has been associated with the atomic energy program since he joined the Atomic Energy Commission's Health and Safety Laboratory in 1947.

Society News.—The following officers of the Kings County Radiological Society were elected for 1959-1960: president, Dr. Ernest I. Melton; vice-president, Dr. Aaron R. Tolk; and secretary-treasurer, Dr. C. Philip Naidorf, 411 Parkside Ave., Brooklyn 26.——At the May meeting of the Brooklyn Ophthalmological Society the following members were elected to office: Dr. Ira W. Mensher, president; Dr. Edward Saskin, vice-president; Dr. Nicholas P. Tantillo, secretary-treasurer; and Dr. Angelo B. Rizzuti, associate secretary-treasurer.

NORTH CAROLINA

Annual Symposium in Raleigh.—The 11th medical symposium of the Raleigh Academy of Medicine will be held at the Carolina Hotel in Raleigh Oct. 22, under the subject, "Headache." Dr. Frank P. Powers, president of the academy, will preside. Speakers for the symposium will include Dr. Arnold P. Friedman, New York City; Dr. Lawrence C. Kolb, New York City; Dr. H. Houston Merritt, New York City; and Dr. John R. Graham, Boston. Interested physicians are invited. For information, write Dr. Walter H. Wilson, Professional Building, Raleigh, N. C.

OREGON

Northwestern Pathologists Meeting.—The fall meeting of the Pacific Northwest Society of Pathologists will be held Oct. 15-17 in Gearhart. Dr. Lauren V. Ackerman, professor of surgical pathology and pathology, Washington University School of Medicine, St. Louis, will present, "Pseudosarcoma of Soft Tissue." A slide seminar is planned for the morning of Oct. 17. The seminar and scientific program are open to all interested physicians. For information, write Dr. Nelson R. Niles, University of Oregon Medical School, Portland 1, Ore., Secretary.

PENNSYLVANIA

Society News.—Officers of the Pennsylvania Radiological Society elected for 1959-1960 are as follows: Drs. D. Alan Sampson, Ardmore, president; Carl B. Lechner, Erie, president-elect; Thomas J. Conahan, Hazleton, first vice-president; Thomas A. Campbell, York, second vice-president; Walter P. Bitner, Harrisburg, secretary-treasurer: John H. Harris Jr., Philadelphia, editor; Marlyn W. Miller, Altoona, associate editor, John H. Harris, Harrisburg, councilor to American College of Radiology; and Newton Hornick, Pittsburgh, alternate councilor. The next annual meeting will be held at Pocono Manor on May 14-15, 1960.

PUERTO RICO

Meeting of Physicians in Santurce.—The American College of Physicians ninth regional meeting will be held at the Puerto Rico Medical Association Building, Santurce, Oct. 9-10. The program will open with a symposium, "Medical Aspects of Schistosomiasis Mansoni," presented in collaboration with the Puerto Rican Committee for Bilharzia Control, and will include "Medical Treatment of Schistosomiasis Mansoni," by Dr. F. Hernandez-Morales, governor of the college for Puerto Rico. Dr. Chester S. Keefer, Boston, president-elect of the college, will present, "From Chronic Bronchitis to Cor Pulmonale," the evening of Oct. 9 and will be luncheon speaker Oct. 10. The program includes a total of 22 papers. For information, write The American College of Physicians, 4200 Broad St., Philadelphia 4.

TEXAS

Dr. McGanity Named Department Chairman.—Dr. William J. McGanity was appointed professor and chairman of the department of obstetrics and gynecology of the University of Texas Medical Branch School of Medicine at Galveston, effective Jan. 1, 1960. He has been visiting professor of obstetrics and gynecology since Sept. 1, 1959. He succeeded Dr. Garth L. Jarvis, who will continue as professor in the department. Dr. McGanity comes to the University of Texas from Vanderbilt University School of Medicine, Nashville, Tenn., where he served as an associate professor.

WEST VIRGINIA

Hospital Seminars.—A series of monthly seminars including lectures on nontechnical health subjects to which the public is invited has been arranged by the Memorial General Hospital in Elkins for the fall and winter of 1959-1960. The first meeting, devoted to a discussion of cancer, sponsored by the Tumor Clinic, was held in the library conference room of the hospital, Sept. 8. Dates for the following monthly meetings will be decided upon by the committee: October, "Is Your Child Healthy?," department of pediatrics; November, "Use and Abuse of Radiation," department of radiology; December, "The Advance of Pathology in Relation to Disease," department of pathology; January, "Facts and Fallacies in Female Disease," department of gynecology and obstetrics; February, "Heart Attack," department of cardiology; March, "Anesthesia and the Patient," department of anesthesiology; April "Abdominal Pain," department of surgery; May "Glaucoma," department of ophthalmology; and June, "100 Years of Dental Progress," department of dentistry.

Personal.—Dr. William P. Bittinger, of Summerlee and Dr. Doff D. Daniel, of Beckley, were reappointed by Governor Cecil H. Underwood as members of the West Virginia Medical Licensing Board for a five-year term, beginning July 1. Drs. Bittinger and Daniel have been members of the board since 1949. The Governor also reappointed Dr. Hu C Myers, of Philippi, as a member of the advisory board to the State Board of Health on Hospital Licensing, a post he has held since 1949. The appointment, effective July 1, is for a term of seven years.—Dr. Charles M. Scott, of Bluefield, was elected president of the West Virginia Chapter of the Medical College of Virginia Alumni Association. He succeeds Dr. Marion F. Jarrett, of Charleston.

WISCONSIN

Personal.—Dr. Alfred S. Evans, who for the past six years has been director of the preventive medicine section of student health and associate professor of medical microbiology, University of Wisconsin Medical Center, Madison, was appointed chairman of its newly established department of preventive medicine and director of the State Laboratory of Hygiene. Dr. Evans will replace retiring Dr. William D. Stovall as Director of the State Laboratory of Hygiene.——Dr. Max J. Fox, a member of the faculty of Marquette University School of Medicine, Milwaukee, since his graduation from its medical school in 1922, was named "Marquette Alumnus of the Year" at a dinner for past-presidents of the alumni association on May 14. He received a citation at Marquette's commencement exercises June 7.

GENERAL

Mid-West Allergy Forum.—The Mid-West Forum on Allergy will hold its third annual meeting Oct. 31-Nov. 1 at the Sheraton-Blackstone Hotel, Chicago. This meeting of the forum is sponsored by the Chicago Society of Allergy. For information, write to Dr. Leon Unger, 185 N. Wabash Ave., Chicago 2.

Music Therapy Convention.—The 10th annual national music therapy convention, sponsored by the National Association for Music Therapy, Inc., the department of music and the continuing education service of Michigan State University, will be held at the Kellogg Center for Continuing Education at Lansing, Mich., Oct. 9-11. The program includes Dr. Henry R. Rollin and Mrs. Maier Brooking, both of London, England. Exhibits and displays are planned. Registration fee is $6. For information, write the Kellogg Center for Continuing Education, Michigan State University, East Lansing, Mich.

Plastic Surgery Meeting in Chicago.—The fall meeting of the American Society of Facial Plastic Surgery will be held Oct. 15-17 at the Palmer House, Chicago. On Oct. 15 the meeting will be open to the medical profession, and the program will be a Colloquy on Refinements in Facial Plastic Surgery and will include a panel discussion. On Oct. 16 operative demonstrations, lectures, and discussions on rhinoplasty and otoplasty are planned. Operative clinics will be held Oct. 17, at which forehead flaps, bone and cartilage grafts, and skin grafts will be considered. For information, write Dr. Samuel M. Bloom, Secretary, 123 E. 83rd St., New York 23.

Medical History Essay Medal.—The American Association for the History of Medicine has established a medal to be granted annually to "the author of the best essay submitted to the association." The medal has been named in honor of William Osler, "who more than any other teacher of medicine succeeded in creating among students enthusiasm for the history of medicine." Students of medicine are invited to compete for the Osler Medal. Essays submitted should not exceed 10,000 words in length on a historical medical subject of the student's own choice. Deadline for this year will be April 1, 1960. Essays should be submitted by that date to Dr. Samuel X. Radbill, 7043 Elmwood Ave., Philadelphia 42.

Otorhinologic Surgery Meeting in Chicago.—The American Otorhinologic Society for Plastic Surgery, Inc., will meet Oct. 11 at the Conrad Hilton Hotel, Chicago, under the presidency of Dr. Raymond S. Rosedale, Canton, Ohio. Dr. Bagher Sotoodeh, San Antonio, Texas, will present, "Surgery of Laryngeal Webs," and Dr. Gonzalo Obregon, Iowa City, will give, "Thyro-Glossal and Branchial Cysts." Evening panel discussions moderated by Dr. John T. Dickinson, Pittsburgh, will be held under the following titles: Neck Surgery, Miscellaneous Topics on Plastic Surgery of the Head, and A Method of Rhinoplasty. For information, write Dr. Joseph G. Gilbert, Secretary, 75 Barberry Lane, Roslyn Heights, N. Y.

Meeting of Life Insurance Medical Directors.—The 68th annual meeting of the Association of Life Insurance Directors of America will be held Oct. 21-23 at the Hotel Statler Hilton, New York City, under the presidency of Dr. Henry B. Kirkland. Dr. Louis M. Orr, President, American Medical Association, will present, "Uncle Sam with a Stethoscope," the morning of Oct. 21. Other papers include the following:

Accomplishments and Needs of Cardiovascular Research, Dr. Francis R. Dieuaide, New York City.
The Neurotic Claimant: Evaluation of Disability, Dr. Peter G. Denker, New York City.
Highlights of the New Build and Blood Pressure Study, Dr. John J. Hutchinson, New York City.
Which Erring Men Call Chance, Dr. Frank B. Berry, Washington, D. C.
The Master "2-step" Electrocardiographic Test Brought up to Date, Dr. Arthur M. Master, New York City.
Factors in the Evolution of Occlusive Coronary Artery Disease, Dr. Milton Helpern, New York City.
Advances in Surgery: Their Effects on Medical Underwriting, Dr. Claude M. Lee Jr., Cincinnati.

At the banquet, 6:30 p. m., Oct. 22, Mr. Robert H. Trench Thompson, United States Manager, British Overseas Airways Corporation, New York City, will present, "Civil Aviation and World Politics." The program will conclude with a symposium, "Our Public Relations and the Work and Aims of the Health Insurance Council." For information, write Dr. Royal S. Schaaf, P. O. Box 594, Newark 1, N. J., Secretary.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States, its territories and possessions in the weeks ended as indicated:

Area	Sept. 5, 1959		Sept. 6 1958 Total
	Paralytic Type	Total Cases	
New England States			
Maine	1	1	..
New Hampshire	1	1	..
Vermont	..	..	..
Massachusetts	17	28	1
Rhode Island	..	..	..
Connecticut	8	12	2
Middle Atlantic States			
New York	13	29	13
New Jersey	4	12	24
Pennsylvania	10	12	7
East North Central States			
Ohio	12	27	18
Indiana	4	14	8
Illinois	10	22	26
Michigan	5	38	71
Wisconsin	2	6	1
West North Central States			
Minnesota	11	14	..
Iowa	10	33	12
Missouri	21	40	6
North Dakota	..	..	4
South Dakota	..	..	..
Nebraska	..	..	1
Kansas	7	19	1
South Atlantic States			
Delaware	1	2	1
Maryland	..	..	2
District of Columbia	..	..	..
Virginia	23	29	14
West Virginia	12	14	16
North Carolina	14	18	2
South Carolina	3	6	1
Georgia	..	..	8
Florida	..	..	7
East South Central States			
Kentucky	..	..	2
Tennessee	8	24	9
Alabama	13	17	1
Mississippi	..	..	3
West South Central States			
Arkansas	14	17	..
Louisiana	7	9	1
Oklahoma	1	1	3
Texas	7	12	29
Mountain States			
Montana	..	1	..
Idaho	..	..	2
Wyoming	..	..	1
Colorado	1	2	1
New Mexico	2	3	1
Arizona	..	..	1
Utah	..	1	1
Nevada	..	..	..
Pacific States			
Washington	17	17	1
Oregon	9	12	2
California	8	10	14
Alaska	..	..	..
Hawaii	..	..	2
Territories and Possessions			
Puerto Rico	..	..	..
Total	276	503	320

Catastrophes Decrease.—Catastrophes—accidents in which five or more persons are killed—took more than 750 lives in the United States during the first six months of this year, it is reported by statisticians of the Metropolitan Life Insurance Company. In the corresponding period of 1958 the figure was over 800. Through June of this year there were two disasters in which 25 or more persons lost their lives, both of them involving civil aviation. On Feb. 3, a scheduled airliner crashed into the East River in New York City, causing 65 deaths, and 31 were killed when another scheduled plane disintegrated in mid-air during a thunderstorm near Baltimore on May 12. The loss of life in military aviation catastrophes decreased appreciably, according to the statisticians, reaching one of the lowest points for any comparable period in the last 10 years. Bus accidents in which five or more were killed also took fewer lives this year than last. In contrast, catastrophes involving other types of motor vehicles took a greater toll than a year ago.

Fellowships in Psychiatry.—The American Psychiatric Association will continue its program of fellowships in psychiatry for the current year. The program, made possible by a grant from the Smith, Kline, and French Foundation of Philadelphia is intended "to interest physicians and medical students in psychiatry and mental hospitals and to advance levels of treatment and care in these institutions." Several types of awards are available and applications from individual physicians, medical students, or institutions will be considered so long as they relate to these purposes. The new Seymour D. Vestermark Fellowships, named in honor of the late chief of the Training Branch of the National Institute of Mental Health, are intended to stimulate interest and knowledge in psychiatry among "outstanding" medical students. A brochure describing the program and how to apply will be sent on request to Dr. George N. Raines, Chairman, APA Fellowship Committee, 1700 18th St., N. W., Washington 9, D. C.

Meeting on Deafness.—The Alexander Graham Bell Association for the Deaf will hold its 69th annual summer meeting in Rochester, N. Y., June 27-July 1, 1960, Sol Richard Silverman, Ph.D., St. Louis, president of the association, announced. Mr. James H. Galloway, superintendent of the Rochester School for the Deaf, is general chairman. The program committee is headed by Dr. Leo Connor, assistant superintendent of the Lexington School for the Deaf. Included in the five-day meeting will be panel discussions, demonstrations, film showings, visits to schools for the deaf, and sessions of particular interest to members of the parents' section of the association. An invitation is extended by the association to all professional workers in the education of deaf children to present prepared papers on topics of interest. Topics and outlines must be submitted by Nov. 1 for consideration. Final approval will be sent to each author by the program committee. Outlines may be sent to the Alexander Graham Bell Association for the Deaf, 1537 35th St., N. W., Washington 7, D. C.

Chest Physicians Meeting in Albuquerque.—The American College of Chest Physicians will hold a silver anniversary homecoming meeting in Albuquerque, N. M., Oct. 14-17, with headquarters at the Western Skies Hotel. The program is arranged under the following session headings:

Reports Summarizing Technics and Their Applications in the Study and Treatment of Heart Disease.
Pertinent Aspects in the Study and Treatment of Pulmonary Disease: Anatomy, Pathology, and Physiology.
Unrelated Papers on Special Problems of the Heart, Lungs, and Mediastinum.
Medicine and Surgery: Responsibilities for the Control of Cardiopulmonary Disease.
Unrelated Papers on the Medical Study and Treatment of Cardiac and Pulmonary Disease.
Practical Considerations of Cardiovascular Physiology: Applications in Medicine and Surgery.

Nine round-table luncheon meetings and 22 "fireside conferences" are planned. The banquet will be held Oct. 17, 8 p. m. A program of entertainment and ladies' activities is arranged. For information, write Mr. Murray Kornfield, 112 E. Chestnut St., Chicago 11, executive director.

Grants for Pediatric Studies.—Grants providing for postgraduate pediatric studies will be awarded again in 1960 by Wyeth Laboratories, it has been announced by Dr. Philip S. Barba, Philadelphia, past-president of the American Academy of Pediatrics and chairman of the fellowship selection committee. The Philadelphia Pharmaceutical Manufacturing Company will award 20 two-year grants, each carrying an annual stipend of $2,400. Applications for the fellowships must be submitted by Nov. 30, and the grants will be effective on July 1, 1960. Candidates for the pediatric fellowships may include interns, physicians who have recently completed their internship, military service, or a U. S. Public Health Service Tour, and research fellows. All recipients must be citizens of the United States or Canada. Fellowships will be awarded on the basis of the applicants' "interest in the care and treatment of children, character, conscientious and able performance of duties, and academic competence." Those receiving Wyeth grants may attend any hospital whose residency program is properly accredited by the Residency Review Committee of the American Board of Pediatrics, and the Council on Medical Education of the American Medical Association. Applications may be obtained from Dr. Barba at the University of Pennsylvania School of Medicine, Philadelphia.

Meeting on Ophthalmology and Otolaryngology.—The 64th annual meeting of the American Academy of Ophthalmology and Otolaryngology will be held Oct. 11-16 at the Palmer House, Chicago, under the presidency of Dr. John H. Dunnington, New York City. The 16th annual Jackson Memorial Lecture will be given the morning of Oct. 14 by Prof. Dr. Jules Francois, of the department of ophthalmology of the University of Ghent, Belgium, entitled "Syndromes with Congenital Cataract." Dr. James H. Maxwell, professor of otolaryngology, University of Michigan Medical School, Ann Arbor, will give the 15th Wherry Memorial Lecture, "Chronic Lympho-Epithelial Sialadenopathy." The presidential address, "Interdependence," will be given the morning of Oct. 12, to be followed by "Women and Medicine" by the guest of honor, Dr. Georgiana D. Theobald, emeritus clinical pathologist, University of Illinois College of Medicine, Chicago. Two symposiums are planned for section meetings on ophthalmology: Office Management of the Primary Glaucomas and Corneal Surgery. A panel discussion, "Nasal Polyps," is scheduled for the otolaryngology section, Oct. 15. Special scientific programs will be held in conjunction with the meetings of the Committee on Conservation of Hearing and the Otosclerosis Study Group. For information, write Dr. William L. Benedict, 15 Second St., S. W., Rochester, Minn., Executive Secretary.

Public Health Meeting in Atlantic City.—The 87th annual meeting of the American Public Health Association and meetings of related organizations will be held in Convention Hall, Atlantic City, N. J., Oct. 19-23. Dr. Leona Baumgartner, New York City commissioner of health and president of the association, said that the theme, "Public Health Is One World," has been adopted. World Health Organization officials on the program include Dr. M. G. Candau, Geneva, Switzerland, director-general and Dr. Abraham Horwitz, of Chile, director of the World Health Regional Office for the Americas. Authorities from the following countries will present papers before scientific or general sessions: Denmark, England, Ghana, India, Japan, Soviet Union, Sweden, and Yugoslavia. About 400 scientific papers will be presented in 75 sessions. General sessions will feature presentation of the annual Albert Lasker awards of the American Public Health Association and the Sedgwick Memorial Medal. Scientific sessions, workshops, and scientific and technical exhibits are scheduled. Among organizations holding sessions during the week will be the American School Health Association, American College of Preventive Medicine, American Association of Public Health Physicians, American Industrial Hygiene Association, Industrial Medical Association, National Health Council, Joint Commission on Mental Health and Illness, and the Public Health Cancer Association of America. The American Public Health Association, with headquarters at 1790 Broadway, New York City, has more than 13,500 members. Its executive director is Dr. Berwyn F. Mattison.

Grants for Cancer Research.—Award of 210 grants to support research in 79 institutions in the United States and one in England totaling $4,756,834 was announced by the American Cancer Society. Among the recipients are Nobel Prize winners Selman A. Waksman, Ph.D., New Brunswick, N. Y., who developed streptomycin, and Wendell M. Stanley, Ph.D., Berkeley, Calif., who was the first scientist to crystallize a virus. The grant to support research in England is a postdoctoral fellowship to permit an American to complete his training at the Virus Research Unit of the Agriculture Research Council in Cambridge, England. At the same time, the society announced creation of a committee on tobacco and cancer as a standing committee of the board of directors, replacing its ad hoc committee on smoking and health. Dr. Dean F. Davies, St. Louis, formerly American Cancer Society administrator for research on lung cancer, will be executive secretary of the new committee. The grants announced are the first of a series to be made during the society's fiscal year beginning Sept. 1, and brings the dollar amount of the grants now in effect to more than $15,000,000. Since 1946, the American Cancer Society has awarded more than $71,000,000 for support of research. Among the grants awarded nationally, $1,152,310 is for research on the therapy of cancer. The 50 grants made are for research related to diagnosis and treatment. Nearly as much, $1,150,299, was awarded for 55 grants on the etiology of cancer. Research on the pathogenesis of cancer was supported with 50 grants amounting to $890,480. Fourteen grants for research on lung cancer were awarded amounting to $475,347. Nine postdoctoral fellowships for training in research were awarded at a cost of $118,898. Institutional research grants totaling $939,500 were awarded to 29 institutions.

LATIN AMERICA

Course on Dermatology in Buenos Aires.—A postgraduate course on dermatology will be given by the Asociacion Medica Argentina, Santa Fe, 1171, Buenos Aires, Argentina. This course will consist of theoretical and practical intensive studies on dermatology, under the direction of Dr. Isaac Zelcer, and will start on Nov. 16 and continue to Nov. 21. The basic topics will deal with dermatology in childhood and treatment of dermatologic diseases. Registration will take place at Santa Fe, 1171, Buenos Aires, Argentina. For details, write to this address.

Cuba Recognizes Pan American Confederation.—Dr. Armando Monnar Pérez, chief dispatcher for the Confederacíon Médica Panamericana, has announced that the Revolutionary Government of Cuba made and put into force Law No. 300, dated April 20, 1959, by which the confederation is officially recognized. The ministry of education has given the confederation suitable headquarters. Correspondence to the confederation should be addressed as follows:

Confederacíon Médica Panamericana
Casa de las Americas
Avenida de los Presidentes y 3ra
Vedado—La Habana—Cuba

EXAMINATIONS AND LICENSURE

EDUCATIONAL COUNCIL FOR FOREIGN MEDICAL GRADUATES, INC.

Educational Council for Foreign Medical Graduates: Stations around the world. March 16, 1960 and Sept. 21, 1960. Exec. Director, Dr. Dean F. Smiley, 1710 Orrington Ave., Evanston, Ill.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 21-23, 1960. Sec., Dr. D. G. Gill, State Office Bldg., Montgomery.

Alaska:* On application in Anchorage or Fairbanks. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

Arizona:* *Examination.* Phoenix, Oct. 14-16. *Reciprocity.* Phoenix, Oct. 17. Ex. Sec., Mr. Robert Carpenter, 826 Security Bldg., Phoenix.

Arkansas:* *Examination and Reciprocity.* Little Rock, Nov. 5-6. Sec., Dr. Joe Verser, Harrisburg.

California: *Written.* Sacramento, October 19-22. *Oral.* San Francisco, November 14. *Oral and Clinical.* San Francisco, Nov. 15. Sec., Dr. Louis E. Jones, Room 536, 1020 N Street, Sacramento.

Colorado:* *Examination.* Denver, Dec. 8-9. *Reciprocity.* Denver, Oct. 14. Exec. Sec., Miss Mary M. McConnell, 715 Republic Bldg., 1612 Tremont Place, Denver 2.

Connecticut:* *Examination.* Hartford, Nov. 10-12. Sec. to the Board, Dr. Stanley B. Weld, 160 St. Ronan St., New Haven.

Delaware: *Examination.* Dover, Jan. 12-14. *Endorsement.* Dover, Jan. 21. Sec., Dr. Joseph S. McDaniel, Professional Bldg., Dover.

District of Columbia:* *Examination.* Washington, Dec. 14-15. *Reciprocity.* Washington, Sept. 14. Deputy Director, Mr. Paul Foley, 1740 Massachusetts Ave., Washington 6.

Florida:* *Examination.* Miami Beach, Nov. 22-24. Sec., Dr. Homer L. Pearson, 901 N.W. 17th St., Miami 36.

Georgia: *Examination and Reciprocity.* Atlanta, Oct. 13. Sec., Mr. Cecil L. Clifton, 224 State Capitol, Atlanta 3.

Guam: *Subject to Call.* Act. Sec., Dr. F. L. Conklin, Agana.

Idaho: *Examination* and *Reciprocity.* Boise, Jan. 11, 12, 13. Exec. Sec., Mr. Armand L. Bird, 364 Sonna Bldg., Boise.

Indiana: *Examination.* Indianapolis, June 1960. *Reciprocity.* Indianapolis, fourth Wednesday of each month. Ex. Sec., Miss Ruth V. Kirk, 538 K. of P. Bldg., Indianapolis.

Kansas:* *Examination and Reciprocity.* Kansas City, Jan. 15-16. Sec., Dr. F. J. Nash, New Brotherhood Bldg., Kansas City.

Kentucky: *Examination.* Frankfort, Dec. 14-15. Asst. Sec., Mrs. Ray Wunderlich, 620 South Third St., Louisville 2.

Louisiana: *Examination and Reciprocity.* New Orleans, Dec. 3-5. Sec., Dr. Edwin H. Lawson, 930 Hibernia Bank Bldg., New Orleans 12.

Maine: *Examination* and *Reciprocity.* Portland, Nov. 10. Sec., Dr. Stephen A. Cobb, Stanford.

Maryland: *Examination.* Baltimore, Dec. 8-11, Sec., Dr. Frank K. Morris, 1211 Cathedral St., Baltimore 1.

Michigan:* *Examination.* Lansing, Oct. 26-28. Ex. Sec., Dr. E. C. Swanson, 118 Stevens T. Mason Bldg., Lansing.

Minnesota:* *Examination.* Jackson, June 1960. *Reciprocity.* Jackson, Dec. 7, Sec., Dr. A. L. Gray, Old Capitol, Jackson.

Minnesota:* *Examination and Reciprocity.* St. Paul, Oct. 20-22. Sec., Dr. F. H. Magney, 230 Lowry Medical Arts Bldg., St. Paul 2.

Montana: *Examination and Reciprocity.* Helena, Oct. 6. Sec., Dr. Thomas L. Hawkins, 555 Fuller Ave., Helena.

Nebraska:* *Examination.* Omaha, June 13-15, 1960. Dir., Bureau of Examining Boards, Room 1009, State Capitol Bldg., Lincoln 9.

New Jersey: *Examination.* Trenton, Oct. 20-23. *Reciprocity.* Monthly, Sec., Dr. Royal A. Schaaf, 28 West State St., Trenton.

New Mexico:* *Examination and Reciprocity.* Santa Fe, Nov. 16-17. Sec., Dr. C. Derbyshire, 227 East Palace Ave., Santa Fe.

New York: *Examination.* Albany, Buffalo, New York and Syracuse, Dec. 8-11. Sec., Dr. Stiles D. Ezell, 23 South Pearl St., Albany.

North Dakota: *Examination.* Grand Forks, Jan. 6-8. *Reciprocity.* Grand Forks, Jan. 9. Sec., Dr. C. J. Glaspel, Box 228, Grafton.

Ohio: *Examination.* Columbus, Dec. 15-17. *Endorsement.* Columbus, Oct. 5. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus 15.

Oregon:* *Examination.* Portland, Oct. 22-24. Ex. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland.

Pennsylvania: *Examination.* Philadelphia, January. Sec., Mrs. Margaret G. Steiner, Box 911, Harrisburg.

Texas:* *Examination.* Fort Worth, Dec. 3-5. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth 2.

Utah: *Examination.* Salt Lake City, July 6-8. *Reciprocity.* Salt Lake City, Nov. 17. Director, Mr. Frank E. Lees, 324 State Office Bldg., Salt Lake City 1.

Virginia: *Examination and Reciprocity.* Richmond, Dec. 2-4. Address: Board of Medical Examiners, 631 First St. S. W., Roanoke.

Virgin Islands: *Examination.* Charlotte Amalie, Nov. 12-13. Sec., Dr. Benjamin Nath, Charlotte Amalie, St. Thomas.

Washington:* *Examination.* Seattle, Jan. 11-13. Administrator, Professional Division, Capitol Bldg., Olympia.

West Virginia: *Examination.* Charleston, January. Sec., Dr. Newman H. Dyer, State Office Bldg., No. 3, Charleston 5.

Wisconsin:* *Examination.* Madison, Jan. 14-16. *Reciprocity.* Madison, Oct. 23. Sec., Dr. Thomas W. Tormey, Jr., 1140 State Office Building, 1 West Wilson St., Madison.

Wyoming: *Examination and Reciprocity.* Cheyenne, Oct. 5. Sec., Dr. James W. Sampson, State Office Bldg., Cheyenne.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: *Examination and Reciprocity.* Juneau, November. Sec., Dr. R. Harrison Leer, Alaska Office Bldg., Juneau.

Connecticut: *Examination.* New Haven, Oct. 10. Exec. Asst., Mrs. Regina G. Brown, 258 Bradley St., New Haven 10.

District of Columbia: *Examination.* Washington, Nov. 23-24. Deputy Director, Mr. Paul Foley, 1740 Massachusetts Ave., Washington 6.

Florida: *Examination.* Gainesville, Nov. 7. Sec., Mr. M. W. Emmel, Box 340, Gainesville.

Kansas: *Examination.* Pittsburg, Nov. 6-7. Sec., Dr. Leon C. Heckert, Kansas State College, Pittsburg.

Michigan: *Examination.* Ann Arbor and Detroit, Oct. 9-10. Sec., Mrs. Anne Baker, West Michigan Ave., 116 Stevens T. Mason Bldg., Lansing.

Minnesota: *Examination.* Minneapolis, Oct. 6-7. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis.

New Mexico: *Examination.* Santa Fe, Oct. 18, *Reciprocity.* Santa Fe, Oct. 7. Sec., Mrs. M. Cantrell, P. O. Box 1522, Santa Fe.

Rhode Island: *Examination.* Providence, Nov. 18. *Reciprocity.* Providence, Nov. 4. Administrator, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Dakota: *Examination.* Vermillion, Dec. 4-5. Dr. Gregg M. Evans, 310 East 15th St., Yankton.

Texas: *Examination.* Austin, Oct. 12-13. Sec., Bro. Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

Washington: *Examination.* Seattle, Jan. 6-7. Sec., Mr. Thomas A. Carter, Capitol Bldg., Olympia.

Wisconsin: *Examination.* Milwaukee, Dec. 5. Sec., Mr. Wm. H. Barber, 621 Ranson St., Ripon.

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*Basic Science Certificate required.

GOVERNMENT SERVICES

AIR FORCE

Personal.—Col. James M. Davis, M. C., was recently honored by the Chinese National Air Force with the award of its flight surgeon wings. The award was made in Taipai, Taiwan (Formosa), by Lieut. Gen. HSU, Huan-shen, deputy commander in chief Chinese Air Force. Colonel Davis is presently assigned as director of the professional services for Pacific Air Forces, located at Hickam Air Force Base, Hawaii.

ARMY

Personal.—Major Gen. Elbert DeCoursey, commandant of the Army Medical Service School at Brooke Army Medical Center, received an honorary Doctor of Laws degree from Baylor University in August. The citation praised his contributions to military and medical administration and especially his active interest in pathological research. General DeCoursey also holds the honorary Doctor of Sciences degree from the University of Kentucky, where he took his undergraduate work.

NAVY

Symposium on Environmental Medicine.—The Tenth Annual Military Medico-Dental Symposium on Environmental Medicine for all armed forces of the United States will be held Oct. 28-30, at the U. S. Naval Hospital, Pattison Ave., Philadelphia 45. Members of the medical, dental, and nursing professions, and students, interns, residents, and hospital administrators are cordially invited to attend. Arrangements have been made to award retirement point credits for Army, Air Force, and Naval Reserve officers attending. Address all correspondence to District Medical Officer, Building 4, U. S. Naval Base, Philadelphia 12.

PUBLIC HEALTH SERVICE

Personal.—Dr. Nathaniel I. Berlin was appointed chief, general medicine branch, National Cancer Institute. He has been head of the metabolism service of that branch since his appointment to the staff in November, 1956.——Dr. Glen R. Leymaster, professor and head of the department of preventive medicine at the University of Utah College of Medicine, was appointed to serve a four-year term on the epidemiology and biometry advisory committee of the National Institutes of Health, U. S. Public Health Service.——Dr. Alson E. Braley, professor and chairman of the department of ophthalmology at the State University of Iowa, Iowa City, since 1950, has been reappointed to the National Advisory Neurological Diseases and Blindness Council for a four-year term.

DEATHS

Abbott, C. Norman Ⓜ Cucamonga, Calif.; College of Medical Evangelists, Loma Linda and Los Angeles, 1934; chairman of the board of American Humanics Foundation, of which he was a past-president; member of the American College of Chest Physicians, American Trudeau Society, and the Industrial Medical Association; fellow of the International College of Surgeons; past-president of the San Bernardino County Medical Society; associated with the San Antonio Community Hospital in Upland; died July 18, aged 51.

Abramson, Paul Dowling Ⓜ Shreveport, La.; born in Shreveport March 17, 1906; Tulane University of Louisiana School of Medicine, New Orleans, 1929; specialist certified by the American Board of Surgery; member of the Southeastern Surgical Congress; fellow of the American College of Surgeons and past-president of the Louisiana Chapter; veteran of World War II; clinical professor of surgery at Louisiana State University School of Medicine in New Orleans; past-president of the Louisiana State Medical Society and the Shreveport Medical Society; on the staffs of the Confederate Memorial Medical Center and North Louisiana Sanitarium; formerly co-editor of the *Tri-State Medical Journal;* died July 18, aged 53.

Auld, Douglas De Vallee Ⓜ Sandusky, Ohio; University of Western Ontario Faculty of Medicine, London, Ont., Canada, 1925; member of the Industrial Medical Association; chief physician for the Ford Motor Company; died in the Cleveland Clinic Hospital July 20, aged 62.

Ballenger, William Lee, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1912; for many years on the faculty of the Atlanta Dental College; died in Milledgeville July 17, aged 78.

Bausch, Robert Peter, Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1916; veteran of World War I; formerly medical examiner for the Pennsylvania Railroad; died in the Mercy Hospital July 17, aged 66.

Bonner, Clarence Alden Ⓜ Prides Crossing, Mass.; University of Vermont College of Medicine, Burlington, 1913; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; veteran of World War I; formerly associated with the Worcester (Mass.) State Hospital and Warren (Pa.) State Hospital; served as executive officer at the Boston Psychopathic Hospital and as superintendent of the Danvers State Hospital in Hawthorne; at one time assistant to the commissioner of the department of mental diseases for the state of Massachusetts; served on the editorial staff of the *Mental Health Sentinel;* died July 27, aged 71.

Bralliar, John Seward, Franklin, Ky.; University of Tennessee College of Medicine, Memphis, 1939; interned at the French Hospital in San Francisco; veteran of World War II; member of the Simpson County Board of Health; died July 11, aged 50.

Bray, William Edward Ⓜ Charlottesville, Va.; born in Winona, Miss., March 7, 1882; University of Virginia Department of Medicine, Charlottesville, 1912; specialist certified by the American Board of Pathology; past-president of the Virginia Society for Pathology and Laboratory Medicine; founding fellow of the College of American Pathologists and member of the American Society of Clinical Pathologists; served on the faculty of his alma mater, where he was director of clinical laboratories; professor of pathology and bacteriology at the University of Mississippi School of Medicine in University, 1914-1915; epidemiologist for the state health department of Virginia during the summers from 1910 to 1914; on the staff of the Martha Jefferson Hospital; author of "Clinical Laboratory Methods" and "Synopsis of Clinical Laboratory Methods"; died July 18, aged 77.

Brown, H. Ernest, Roanoke, Va.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1914; served in the Royal Army Medical Corps during World Wars I and II; chief of psychiatry and mental hygiene clinic of the Veterans Administration Hospital and regional office; died July 15, aged 65.

Bryant, John B., Chicago; Meharry Medical College, Nashville, Tenn., 1913; at one time practiced in Stuttgart, Ark.; died July 20, aged 73.

Bundrant, Herschel Belmont, Detroit; Indiana University School of Medicine, Indianapolis, 1936; died July 9, aged 47.

Burbach, William Martin Ⓜ Chicago; Northwestern University Medical School, Chicago, 1905; died July 18, aged 81.

Burnham, Arthur F., Metamora, Mich.; Detroit College of Medicine, 1903; died in Lapeer July 12, aged 80.

Ⓜ Indicates Member of the American Medical Association.

Burwig, William Herbert Ⓜ Buffalo; University of Buffalo School of Medicine, 1923; specialist certified by the American Board of Obstetrics and Gynecology; fellow of the International College of Surgeons and the American College of Surgeons; associated with Millard Fillmore, Deaconess, Buffalo General, and Children's hospitals; died April 16, aged 59.

Chapman, James Aubrey Ⓜ Alexander City, Ala.; Medical College of Alabama, Mobile, 1905; associated with the Russell Hospital; died July 14, aged 79.

Clements, Albert Fred, Evansville, Ind.; Rush Medical College, Chicago, 1920; past-president of the Vanderburgh County Medical Society; veteran of World Wars I and II; died July 9, aged 64.

Compton, Charles Wentworth Ⓜ Springfield, Ill.; Central College of Physicians and Surgeons, Indianapolis, 1900; on the staffs of St. John's and Memorial hospitals; died July 6, aged 83.

Cook, William Henry Ⓜ Chickasha, Okla.; Washington University School of Medicine, St. Louis, 1907; served as chief surgeon for the Frisco Railroad for many years; died in the Chickashaw Hospital July 12, aged 81.

Crane, Harley C., Flint, Mich.; Detroit College of Medicine and Surgery, 1929; veteran of World War I; died July 14, aged 65.

Crothers, Bronson, Cambridge, Mass.; Harvard Medical School, Boston, 1910; member of the American Pediatric Society, of which he was past-president, American Academy of Pediatrics, American Neurological Association, and the Association for Research in Nervous and Mental Diseases; served on the faculty of his alma mater; on the staff of the Children's Hospital; veteran of World War I; author of "Disorders of the Nervous System in Childhood" and "A Pediatrician in Search of Mental Hygiene"; died in his summer home in Sorrento, Maine, July 17, aged 75.

Crume, William Keith Ⓜ Bardstown, Ky.; University of Louisville School of Medicine, 1934; interned at the Louisville City Hospital, where he served a residency; member of the American Academy of General Practice; member of the city council; served as a member of the board of education and the Nelson County Health Department; a director of the Farmers Bank & Trust Company; associated with the Flaget Memorial Hospital, where he died July 10, aged 53.

Culver, Harry Ⓜ Chicago; Rush Medical College, Chicago, 1913; specialist certified by the American Board of Urology; member of the American Association of Genito-Urinary Surgeons and the American Urological Association; fellow of the American College of Surgeons; chairman, Section on Urology, American Medical Association, 1933-1934; formerly associated with the U. S. Public Health Service; served as chief of the department of urology at Cook County and St. Luke's hospitals; died while on a vacation in Gleneagles, Scotland, Aug. 5, aged 73.

Currie, George Alexander Wilson, Toronto, Ont., Canada; born in Picton Nov. 20, 1913; Queen's Faculty of Medicine, Kingston, Ont., 1938; interned at Regina General Hospital in Regina, Sask.; veteran of World War II; past-president of the Colorado Hospital Association; a member of the American Hospital Association, American College of Hospital Administrators, and the American Public Health Association; formerly assistant hospital administrator at St. Luke's Hospital in New York City; on the faculty of the University of Colorado School of Medicine and on the staff of the Colorado General Hospital in Denver; later accepted an appointment at the University of Texas Medical Branch in Galveston, Texas, resigning in 1957, when he became superintendent of the Hospital for Sick Children; died while vacationing at a lodge near Picton, Ont., July 16, aged 45.

Darrow, Anna A. Ⓜ Coral Gables, Fla.; Chicago College of Medicine and Surgery, 1909; died July 22, aged 82.

Davis, Carl Lawrence, Hillsdale, Mich.; born in Vermontville, July 9, 1878; Columbian University Medical Department, Washington, D. C., 1903; retired in 1948 after 29 years as professor of anatomy at the University of Maryland School of Medicine in Baltimore; served on the faculty of his alma mater, now known as the George Washington University School of Medicine, as demonstrator in anatomy from 1912 to 1914 and as professor of anatomy from 1914 to 1919; member of Phi Sigma, the Society of Sigma Xi, American Association for the Advancement of Science, and the American Association of Anatomists; died in the Hillsdale Health Center July 13, aged 81.

Dickson, Green Knowlton, Oklahoma City, Okla.; Washington University School of Medicine, St. Louis, 1922; died in the Veterans Administration Hospital July 11, aged 62.

Drues, Isadore Abraham Ⓜ Tacoma, Wash.; University of Illinois College of Medicine, Chicago, 1923; died in the Tacoma General Hospital July 16, aged 60.

Ellis, Frank Alberson Ⓜ Corpus Christi, Texas; University of Pennsylvania School of Medicine, Philadelphia, 1918; specialist certified by the American Board of Urology; veteran of World War II; served as secretary and treasurer of the North Carolina Urological Society; while practicing in Salisbury, N. C., served a term as president of the Rowan County Medical Society; on the staffs of the Crippled Children's, Memorial, and Spohn hospitals; died in the Veterans Administration Hospital, Houston, July 12, aged 65.

Epps, Curtis Howard Ⓜ Springfield, Mo.; Washington University School of Medicine, St. Louis, 1936; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; veteran of World War II; on the staffs of the Burge Hospital, St. John's Hospital, and Springfield Baptist Hospital; local surgeon for the Frisco Railroad; died in the Barnes Hospital, St. Louis, July 17, aged 47.

Farley, Hiram H. Ⓜ Logan, W. Va.; Hospital College of Medicine, Louisville, 1904; served as a member of the city council; formerly medical director of the Mercy Hospital, now known as Guyan Valley Hospital; died July 18, aged 80.

Fowler, Wirt Dee, Eden, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1909; served overseas during World War I; died in Austin July 7, aged 77.

Frey, Conrad, Las Vegas, N. M.; University of Texas School of Medicine, Galveston, 1913; served on the staff of the Wichita Falls (Texas) State Hospital; on the staff of the New Mexico State Hospital; died July 10, aged 83.

Friedlander, Emil Ⓜ Cincinnati; Universität Rostock Medizinische Fakultät, Rostock, Mecklenberg, Germany, 1918; member of the American Academy of Dermatology and Syphilology; instructor of dermatology at the University of Cincinnati College of Medicine; on the staffs of the Cincinnati General and Jewish hospitals; died July 8, aged 68.

Harris, Clarence P. Ⓜ Houston, Texas; Loyola University College of Medicine, Chicago, 1916; specialist certified by the American Board of Radiology; fellow of the American Roentgen Ray Society and the American College of Radiology; veteran of World War I; associated with the Jefferson Davis Hospital, St. Joseph Hospital, and the Huntsville (Texas) Memorial Hospital; died July 19, aged 65.

Hausner, Erich P. Ⓜ Santa Fe, N. M.; born Aug. 1, 1905; Deutsche Universitat Medizinische Fakultat, Prague, Czechoslovakia, 1929; specialist certified of the American Board of Internal Medicine; veteran of World War II; served a fellowship at the Mayo Foundation in Rochester, Minn.; from 1933 to 1935 assistant professor of medicine at his alma mater; past-president of the New Mexico Society of Internal Medicine; associated with the Los Alamos Medical Center in Los Alamos, Espanola (N. M.) Hospital, St. Vincent's Hospital in Santa Fe, and St. Anthony's Hospital in Las Vegas; consultant in medicine at the Veterans Administration Hospital in Albuquerque; died in Beaulieu-Sur-Mer, France; July 2, aged 54.

Hofmann, Andrew Ⓜ Hammond, Ind.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; served as coroner of Lake County; on the honorary staff of the St. Margaret Hospital, where he died July 9, aged 81.

Horton, Charles Bertram, New York City; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1925; member of the American Psychiatric Association; veteran of World Wars I and II; at one time associated with the State School for Boys at Meriden, Conn.; died July 17, aged 60.

Houser, Oscar Julian Ⓜ Charlotte, N. C.; North Carolina Medical College, Charlotte, 1914; associated with Charlotte Memorial Hospital; died in the Mercy Hospital July 21, aged 74.

Hughes, Bernard, New York City; New York Homeopathic Medical College and Flower Hospital in New York City, 1918; veteran of World War I; deputy superintendent, Kings County Hospital; died in the Veterans Administration Hospital in Brooklyn July 24, aged 77.

Hyde, Robert Dwight Ⓜ Beverly Hills, Calif.; Harvard Medical School, Boston, 1927; certified by the National Board of Medical Examiners; associated with Santa Monica Hospital and St. John's Hospital in Santa Monica, where he died July 15, aged 63.

Jackson, Kenna Ⓜ Clarksburg, W. Va.; College of Physicians and Surgeons, Baltimore, 1913; for many years county coroner; died July 16, aged 77.

Jacobs, Benjamin C. Ⓜ Los Angeles; Cornell University Medical College, New York City, 1923; assistant clinical professor of psychiatry at the College of Medical Evangelists in Loma Linda and Los Angeles; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; served on the staffs of the Metropolitan State Hospital in Norwalk, Los Angeles County General Hospital, and White Memorial Hospital; died July 18, aged 62.

Jones, Thomas Glenn, Hyattsville, Md.; National University Medical Department, Washington, D. C., 1902; died April 28, aged 83.

Kalish, John Theophil Ⓜ Baltimore; Schlesische Friedrich Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, Germany, 1924; interned at the Madison Park Hospital in Brooklyn; served a residency at the Kingston Avenue Hospital in Brooklyn and the Robert Koch Hospital in Koch, Mo.; member of the American Trudeau Society;

associated with the Veterans Administration Hospital; died in the Johns Hopkins University Hospital July 9, aged 58.

Kennedy, Andrew Aloysius, Clifton, N. J.; Temple University School of Medicine, Philadelphia, 1923; veteran of World Wars I and II; for many years associated with the Veterans Administration; on the staffs of the Veterans Administration Hospital in East Orange, where he died July 15, aged 66.

Kerr, George Kenneth, Staten Island, N. Y.; Columbia University College of Physicians and Surgeons, New York City, 1928; veteran of World War II; on the staff of St. Vincent's Hospital; died July 2, aged 56.

King, William Scott, Green Bay, Wis.; Northwestern University Medical School, Chicago, 1911; for many years practiced in Eveleth, Minn., where he was school physician; died July 17, aged 72.

Koerber, Lillie Louise, San Francisco; Cooper Medical College, San Francisco, 1906; died in July, aged 80.

Koreski, Benjamin Clarence Ⓜ Yakima, Wash.; St. Louis University School of Medicine, 1932; past-president of the Yakima County Medical Society; fellow of the American College of Surgeons; staff member, St. Elizabeth's and Yakima Valley Memorial hospitals; died in the University of Washington Hospital in Seattle, July 9, aged 65.

Landry, Lucian Hyppolite Ⓜ New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1907; member of the founders group of the American Board of Surgery; member of the Southern Surgical Association, of which he was formerly vice-president; for many years on the faculty of his alma mater; fellow of the American College of Surgeons; consultant at the Touro Infirmary and Charity Hospital of Louisiana; past-president of the Tulane Alumni Association; died July 11, aged 76.

Landsman, Arthur Armin Ⓜ New York City; Cornell University Medical College, New York City, 1900; also a graduate in pharmacy; senior fellow of the American Proctologic Society; past-president of the New York State Proctologic Society; for many years president of the medical board of the Jewish Memorial Hospital, where he was attending physician and consultant in proctology; died in the Beth Israel Hospital July 31, aged 85.

Lang, Herbert Bowman, South Hadley, Mass.; Harvard Medical School, Boston, 1902; served as chairman of the board of health and school physician; at one time on the board of water commissioners for Fire District Number 2; on the courtesy staffs of Holyoke and Providence hospitals in Holyoke; died July 24, aged 85.

Latta, Philip Rankin Ⓜ La Grange, Ill.; University of Illinois College of Medicine, Chicago, 1937; specialist certified by the American Board of Dermatology and Syphilology; fellow of the American Academy of Dermatology and Syphilology; veteran of World War II; on the staffs of the Community Memorial General Hospital in La Grange and the Hinsdale (Ill.) Sanitarium and Hospital, where he died July 17, aged 48.

Leggett, Lindley Hoag Jr. Ⓜ Westfield, N. J.; New York Homeopathic Medical College and Hospital, New York City, 1918; member of the board of health; associated with the Muhlenberg Hospital in Plainfield; died in Pemaquid Point, Maine, July 22, aged 64.

Leslie, William Francis, Hilo, Hawaii; Indiana University School of Medicine, Indianapolis, 1928; past-president of the Hawaii County Medical Society; superintendent of the Puumaile–Hilo Memorial Hospital, where he died July 4, aged 56.

Lettinga, Dirk, Grant, Mich.; Grand Rapids Medical College, 1907; past-president of the Grant village; village councilman for 38 years; served as health officer and secretary treasurer of the school board; a trustee of the Grant Chamber of Commerce; died in the Grant Community Hospital July 10, aged 83.

Long, Frank Leo Ⓜ Los Angeles; Washington University School of Medicine, St. Louis, 1904; veteran of World War I; chief regional medical officer of the Veterans Administration; retired Nov. 30, 1952; at one time on the staff of State Hospital in Farmington, Mo.; died in Hollywood Presbyterian Hospital July 9, aged 76.

Lynch, John Patrick Ⓜ Pawtucket, R. I.; Long Island College of Medicine, Brooklyn, 1905; died in the Memorial Hospital July 4, aged 79.

McCannel, Archibald Duncan Ⓜ Minot, N. D.; born in Chesley, Ont., Canada, June 3, 1879; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1906; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; fellow and past-governor of the American College of Surgeons; past-president of the North Dakota State Medical Association, of which he was past-vice-president; served as a member of the state board of medical examiners; past-president of the board of the YMCA; formerly member of the North Dakota Public Welfare Board; received the Silver Beaver award for outstanding service to the Boy Scout program; from 1940 to 1947 president of the First National Bank and served as chairman of the board; associated with the St. Joseph's and Trinity hospitals; in 1954 received the honorary doctor of science degree from Jamestown (N. D.) College, serving on its board of trustees for many years; died July 22, aged 80.

McGuire, John W. Ⓜ Neodesha, Kan.; University Medical College of Kansas City, Mo., 1905; associated with Wilson County Hospital as chief of staff; charter member of the Neodesha Lions Club, serving as its first president; a director of the First National Bank of Neodesha; died July 16, aged 79.

Marlatt, Harry R. Ⓜ Fairport, N. Y.; born in Troupsburg, N. Y., June 26, 1885; University of Buffalo School of Medicine, 1911; interned at the Monroe County Hospital in Rochester, N. Y.; practiced in Honeoye Falls, N. Y., where he served as health officer, coroner's physician, and surgeon for Lehigh Valley Railroad; for many years field agent with U. S. Public Health Service in the state of Louisiana; formerly medical director of hospitals at Pennsylvania Ordnance Works in Williamsport, and Kankakee Ordnance Works in Joliet, Ill.; served as burgess of Montgomery and as school physician of Lycoming County, Pa.; director of the Peoria County Tuberculosis Association; member of the American School Health Association, Illinois Public Health Association, Mississippi Valley Medical Society, and the Peoria Chamber of Commerce; recipient of the Congressional Medal for Selective service work during World War II; in 1946 was named health officer of the newly organized full-time Peoria County health unit and served until 1951; retired in 1955 as institutional health officer, Peoria State Hospital; died July 13, aged 74.

Mayher, John William Ⓜ Columbus, Ga.; Northwestern University Medical School, Chicago, 1934; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; associated with St. Francis Hospital and the Medical Center; died July 11, aged 50.

Mengis, Christopher Ludwig, Opelousas, La.; born July 11, 1877; Medical Department of Tulane University of Louisiana, New Orleans, 1900; specialist certified by the American Board of Preventive Medicine; director of St. Landry Parish health unit for 15 years; part-time director of Evangeline Parish Health Unit, Ville Platte, La.; past-president of the state board of health; served as assistant state health officer and director of the division of local health service, state board of health; president of the local Chapter for Crippled Children and Adults; past-president of the Louisiana Public Health Association and the Louisiana Conference of Social Welfare; formerly director of the Franklin Parish health unit and the Iberia Health unit; veteran of World War I; fellow of the American Public Health Association; charter member of the American Association of Public Health Physicians; an honorary staff member of the Opelousas General Hospital; died July 10, aged 81.

Messmore, Walter Teed, Uniontown, Pa.; University of Maryland School of Medicine, Baltimore, 1901; died in the Uniontown Hospital July 23, aged 81.

Meyer, Karl George Moritz, New York City; Universität Rostock Medizinische Fakultät, Rostock, Mecklenberg, Germany, 1904; died June 7, aged 79.

Miller, Robert Francis Ⓜ Portland, Ore.; University of Oregon Medical School, Portland, 1935; specialist certified by the American Board of Internal Medicine; veteran of World War II; served on the faculty of his alma mater; associated with Providence Hospital and St. Vincent's Hospital, where he died July 11, aged 50.

Miner, Charles Howard Ⓜ Wilkes-Barre, Pa.; born in Wilkes-Barre, July 5, 1868; University of Pennsylvania Department of Medicine, Philadelphia, 1893; veteran of the Spanish-American War; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the American Clinical and Climatological Association; past-president of the Luzerne County Medical Society; one of the founders of the National Tuberculosis Association and of the Pennsylvania Tuberculosis and Health Association, of which he was the 13th president; instrumental in founding of the Wyoming Valley Tuberculosis Society, of which he was president and later president emeritus; formerly secretary of the state board of health; at one time medical director of Luzerne County; helped in planning the establishment of the Kirby Health Center, and served as first secretary of the board and in 1943 was elected president; named president emeritus at his retirement; in recognition of his long and active career in the health field and leadership in the fight against tuberculosis, the Pennsylvania State Tuberculosis Sanatorium number 3 in Hamburg, Pa., was renamed the Charles H. Miner State Hospital; consulting physician at the Wilkes-Barre General Hospital; served on the staffs of the White Haven (Pa.) Sanatorium, where a ward was named in his honor, and the Mercy Hospital; died July 12, aged 91.

Mitchell, Ralph Cadwallader Ⓜ Sophia, W. Va.; Maryland Medical College, Baltimore, 1902; honorary life member of the West Virginia State Medical Association; veteran of the Spanish-American War and World War I; died in the Beckley (Va.) Hospital July 26, aged 80.

Moeller, Carl Emil Ⓜ St. Louis; Washington University School of Medicine, St. Louis, 1903; associated with Alexian Brothers Hospital and the Lutheran Hospital, where he died July 16, aged 80.

Moolten, Ralph Rembrandt, New York City; Columbia University College of Physicians and Surgeons, New York City, 1919; fellow of the American

College of Surgeons; veteran of World War II; a medical expert for the workmen's compensation division of the city's law department; associated with the New York Postgraduate Medical School and Hospital; on the staff of the University Hospital; died July 20, aged 62.

Morehouse, James Amos Ⓜ Sterling, Colo.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1905; associated with Logan County Hospital and St. Benedict Hospital; died July 18, aged 76.

Moyes, George Gowans Ⓜ Ogden, Utah; Northwestern University Medical School, Chicago, 1911; past-president of Weber County Medical Society; on the staffs of St. Benedict's Hospital and Thomas D. Dee Memorial Hospital, where he died July 16, aged 80.

Murray, Vance Bishop Ⓜ Guerneville, Calif.; Columbia University College of Physicians and Surgeons, New York City, 1911; died July 12, aged 71.

Musgrave, Robert G., Oakland, Calif.; Kansas City (Mo.) Medical College, 1889; died in Modesto July 3, aged 92.

Nelson, Paul Oscar Ⓜ Emmetsburg, Iowa; State University of Iowa College of Medicine, Iowa City, 1919; died July 7, aged 65.

Norton, Ethelbert Moses Ⓜ Birmingham, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1914; member of the American Academy of General Practice; died July 10, aged 74.

Oesterreicher, Donald Lawson Ⓜ Norman, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1949; interned at the University Hospitals in Oklahoma City, where he served a residency; associated with the Central State Hospital and the Norman Municipal Hospital, where he died July 7, aged 37.

Oldenburg, Alfred Vernor, Chicago; Jenner Medical College, Chicago, 1906; died July 20, aged 77.

Peacock, Thomas Gerald, Milledgeville, Ga.; Harvard Medical School, Boston, 1921; veteran of World War I; member of the American Psychiatric Association; superintendent emeritus of the Milledgeville State Hospital, where he was medical superintendent for many years; died July 13, aged 63.

Perry, Frank O., Norwood, Ohio; Medical College of Ohio, Cincinnati, 1899; formerly city health officer; died in the Good Samaritan Hospital July 8, aged 85.

Quiring, Walter Otto Ⓜ Hutchinson, Kan.; University of Kansas School of Medicine, Kansas City, 1913; specialist certified by the American Board of Otolaryngology; veteran of World War I; past-president of the Reno County Medical Association; associated with St. Elizabeth Mercy Hospital and Grace Hospital, where he died July 6, aged 72.

Rabens, Isidore, Lynwood, Calif.; Rush Medical College, Chicago, 1916; formerly practiced in Chicago, where he was on the faculty of the University of Illinois College of Medicine and on the staffs of Cook County and Mount Sinai hospitals; died in St. Francis Hospital July 15, aged 69.

Richey, Sidney Moore Ⓜ Tulsa, Okla.; St. Louis College of Physicians and Surgeons, 1895; retired surgeon for the Frisco Railroad; died July 10, aged 90.

Robbins, Charles Pern Ⓜ Winona, Minn.; Jefferson Medical College of Philadelphia, 1894; first president of the Winona County Public Health Association; for many years city school physician and Winona County physician; associated with the Winona General Hospital; died July 15, aged 86.

Schrader, Edwin Frederick Ⓜ Macomb, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; died in Peoria July 2, aged 80.

Taylor, Ruth Elaine Ⓜ Chicago; Rush Medical College, Chicago, 1924; served with the student health service at the University of Chicago; for many years on the staff of the Albert Merritt Billings Hospital; died in the Buffalo (N. Y.) General Hospital July 18, aged 63.

Thompson, Cecil Frank, Phillips, Maine; Tufts College Medical School, Boston, 1926; on the staff of the Franklin County Memorial Hospital in Farmington, where he died July 9, aged 59.

Wagner, Charles Andrew Ⓜ Pasadena, Calif.; Jefferson Medical College of Philadelphia, 1934; veteran of World War II; on the staffs of the Alta Vista and Collis P. and Howard Huntington Memorial hospitals; died in St. Luke's Hospital July 14, aged 50.

Wallace, Richard Hendrickson Ⓜ Brookline, Mass.; Harvard Medical School, Boston, 1927; fellow of the American College of Surgeons; served on the faculty of his alma mater; certified by the National Board of Medical Examiners; specialist certified by the American Board of Surgery; served on the staffs of the Massachusetts General Hospital in Boston and the Pondville Hospital in Walpole; consultant at the Massachusetts Eye and Ear Infirmary, Boston; died in Boston July 8, aged 58.

White, James Franklin, Baltimore; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1923; died June 24, aged 58.

FOREIGN LETTERS

FRANCE

Gamma Globulin and Peptic Ulcer.—R. Cavaillo (*Archives des Maladies de l'Appareil Digestif*, Dec., 1958) treated 1,000 patients who had gastric ulcer with convalescent serum. He gave four intramuscular injections of 20 cc. each weekly, followed by maintenance treatment consisting of one injection of 20 cc. every three months for three years. The results were excellent even in those who were emaciated due to renal or cardiac complications or tuberculosis. In view of the difficulty of standardizing this treatment because of the inconstant activity of the serum, the fact that it can be kept for only a few months, and the risk of transmitting viral hepatitis, the author treated the next 46 patients who had gastric ulcer with standard gamma globulins. He gave three intramuscular injections weekly of 10 cc. each. The results in most patients were excellent although less constant than those obtained with the serum. The author concluded that either most donors had a natural antiulcerous substance in their serum or that among the more than 1,000 donors some had healed ulcers and their serum possessed a specific antiulcerous action. The author made further studies with gamma globulins obtained from plasma of patients with healed or healing ulcers and found that the activity of these gamma globulins was about five times as effective as that of standard gamma globulin.

Electrocardiogram After Clinical Death.—K. Saracoglu (*Archives des Maladies du Coeur et des Vaisseaux*, March, 1959) studied the electrocardiograms of 30 persons during and after clinical death. The electric activity of the heart continued after beating of the heart and respiration stopped. Death of the heart started with the lengthening of the PQ interval, then the P wave disappeared, which was a sign of sinoauricular block. The normal systolès were replaced by substitute systoles. The sinus continued its electrical activity until the anatomic death of the myocardium. The alteration of the conductive system was revealed by the prolongation of the QRS complex, which became biphasic. These changes were due to a decrease in metabolism and an increase of the serum carbon dioxide concentration. Foci of infarction sometimes preceded clinical death. Electrical activity might continue for 1 to 40 minutes. In patients who died of noncardiac causes there were terminal complex noncharacteristic monophasic waves, and in those who died of cardiac diseases chaotic tracings and ventricular fibrillation occurred. Intracardiac injections of epinephrine generally failed in patients with cardiac disease, because it provoked ventricular fibrillation. This was not always the case in persons who died of other causes. The author concluded that the difficulty in reanimation was due to the rapid degeneration of the myocardium.

Anuria in Carbon Tetrachloride Poisoning.—Prof. J. Hamburger (*Acquisitions Médicales Récentes*, 1958) stated that anuria due to carbon tetrachloride poisoning is often misdiagnosed. Of 571 patients with anuric nephrosis treated at the Necker Hospital, 25 were due to this poisoning, 6 were caused by trichloroethylene poisoning, and only 17 had nephrosis caused by mercurials. Of these 25 patients, 12 illnesses were due to the professional use of carbon tetrachloride in the workshop and 8 to the domestic use of carbon tetrachloride products for cleaning. In nine patients alcoholic intoxication aggravated the condition.

The author advised that roentgenograms of the chest be made in order to discover latent pulmonary edema. Of the 25 patients, a correct diagnosis was made only in 2. In the other 23 the initial diagnosis included hepatobiliary disease, infection, and pneumonopathy. The duration of anuria was 5 to 14 days. In relation to treatment the danger of the water-salt overload led the author to attempt to obtain a negative fluid balance by limiting and sometimes temporarily withdrawing all fluid intake. On the other hand, during the anuric phase sodium chloride by any route was contraindicated even if the serum level of this salt was low. In eight of the patients the intensive humoral disturbances made extrarenal dialysis necessary. This procedure was indicated by an increase in the level of blood urea which exceeded 3.5 Gm. per liter. Of the 25 patients 24 were cured and 1 died of cirrhosis of the liver.

Staphylococcic Vaginitis.—In the Dec. 12, 1959, issue of *Revue Francaise de Gynécologie et d'Obstétrique*, J. Bret and co-workers reported that of 623 patients with vaginitis 145 (24.7%) were due to staphylococci, showing the same frequency as vaginitis due to trichomonas. The clinical forms were not suggestive of bacterial infection. Some patients had vaginal ulceration or vulvoanal pyodermatitis and a urinary syndrome. The prognosis was worse

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The items in these letters are contributed by regular correspondents in the various foreign countries.

in pregnant women. In such patients episiotomy may be complicated by separation of the perineal sutures, cesarean section may be followed by a fatal infection, and otherwise normal delivery may be followed by mammary and urinary infections. In the newborn infant, infection of the umbilical cord, conjunctiva, and respiratory tract may occur. Vaginitis due to staphylococci in all of these patients was resistant to antibiotics.

GERMANY

The Intestinal Electrogram.—The prerequisites of electrographic diagnosis of the intestine were studied by Tiemann and Reichertz (*Med. Klin.* 54:654, 1959) on rats, guinea pigs, and cats under urethan or chloralose-urethan anesthesia. With the use of action-current pictures they succeeded in representing the motility of the intestinal canal in the form of variations of potential by electrography. The curves obtained are termed electrointestinograms (EIG). Vagomimetics, vagolytics, arecoline, carbachol, and atropine, given parenterally, were found to affect the curves. Atropine abolished the changes due to carbachol. The effect of papaverine was less distinct. Barium sulfate had no effect. Clinical examinations of sick and healthy persons gave similar results. Various types of waves could be distinguished: N, C, D, and E, corresponding to normal, hypermotor, stenotic, and dissociated motor conditions. The curves derived from three abdominal points were clearly altered in some intestinal diseases. A gastric carcinoma had wave type C, hypermotility of the small intestine type D, and recent duodenal ulcer associated with spasm and enteric processes corresponded to type E. The EIG provides only a functional diagnosis of the intestinal canal. It is not an aid in the early diagnosis of carcinoma.

INDIA

Tuberculous Meningitis.—A. M. Sur and co-workers concluded from a study of 133 patients with tuberculous meningitis that the lower the level of consciousness at the onset of the disease, the higher the death rate. Other factors that influenced the prognosis were the presence of secondary infection and the development of hydrocephalus and subarachnoid block, all of which were associated with a poor prognosis. Reactivation of the disease often occurred with premature cessation of bed rest before the signs of activity of the disease had subsided completely.

Streptomycin combined with isoniazid was the usual treatment. Cortisone was given to patients who (1) were seriously ill at the onset, (2) showed a poor response to treatment, or (3) showed a sudden deterioration or threatened subarachnoid block. The streptomycin was given intraventricularly instead of intrathecally to patients with subarachnoid block. Tuberculin or streptokinase was given intrathecally to those with threatened block. Vasodilators were helpful in three patients in preventing complete optic atrophy, but failed to do so in one. The general survival rate was 39.6%. Sequelae among survivors were blindness in seven, hemiparesis in three, facial palsy in three, mental deficiency in one, and moon facies with hirsutism in three, two of whom received cortisone. Of 52 survivors 22 could be followed up. Twenty were alive, two had relapses (one of these died and the other was in the ward when last seen).

Failure to demonstrate acid-fast bacilli (AFB) in the cerebrospinal fluid does not exclude tuberculous meningitis as revealed by two patients in this series with such negative findings when the AFB could be demonstrated in exudates in the ventricles or base of the brain, at autopsy, or at operation. The survival rate in patients treated intrathecally with streptomycin and isoniazid was 37.1% as compared with 73% in those who received only intramuscular doses of streptomycin with large doses of isoniazid. The incidence of such complications as pyogenic meningitis and subarachnoid block was also higher when streptomycin was given intrathecally.

Phosphatase Activity of Escherichia Coli.—C. M. Rangam and co-workers (*Indian Journal of Medical Sciences*, vol. 13, June, 1959) studied the phosphatase activity of Escherichia coli to determine the frequency with which phosphatase-producing organisms are found and whether the ability to produce this enzyme depends on the source from which the organisms are obtained. They also tried to find out if any correlation exists between phosphatase production and pathogenicity. Eighty-five strains of Esch. coli from stools of normal healthy persons, from persons who had enteritis, from urinary cultures, and from laboratory stock cultures were used to make dermonecrotic tests. They were also tested for the production of hemolysin. All but one strain of the organism yielded positive tests for phosphatase production, irrespective of their source. Dermonecrosis was obtained with 19 strains and showed no relation to phosphatase production or intensity of phosphatase activity; 30 strains showed hemolytic activity and 9 of these gave positive dermonecrotic tests. Thus, pathogenicity in skin was found to have no relation to phosphatase production and hemolytic activity with regard to Esch. coli.

Trachoma Week.—Trachoma week, organized by the sight conservation committee of the Lions Club of Bombay, was inaugurated on July 4. During the week about 5,000 pupils in selected schools were examined by about 20 ophthalmologists who offered their services free. After being examined each child was given a card showing the condition of his eyes. The card will indicate if the child's eyes are diseased in order that proper treatment can be given in time. The mayor, inaugurating the week, said he was happy to see that clubs generally devoted to relaxation of members were turning into service organizations.

Typhoid in Children.—S. S. Manchanda and co-workers (*Indian Journal of Child Health,* vol. 8, June, 1959) analyzed a series of 270 children with typhoid. Only those with a positive blood culture or a rising agglutination titer were included for study. The incidence was highest from May to October. The most common age group to be involved was 5 to 10 years. In 4.44% of the patients marked cerebral and meningeal symptoms were present at the onset, and meningitis and encephalitis could be excluded only after examination of the spinal fluid. A single relapse occurred in 34, and relapses occurred twice in 2 patients. Leukopenia was present in only 21.9%; in 22.8% there was leukocytosis. A Widal test was done on 266 patients. In 239 patients it was positive with a rising titer. No relation was observed between the duration of illness and the peak of the agglutination titer. All patients in this series were treated with chloramphenicol. Toxic effects on the hemopoietic system were entirely absent even in patients with a low leukocyte count. Their count increased steadily as the toxemia was controlled. Prednisolone was given to 14 patients. Except in three who developed perforation the results of this treatment were good. The death rate was 5.2% and was highest in the group aged 2 to 5 years. None of the five patients who had an intestinal perforation recovered. No relationship was found between blood count and response to treatment. The prognosis was also unaffected by a positive or negative blood culture after the first week.

Bronchodilator Action of Local Anesthetics.—Singh and Sharma (*Indian Journal of Medical Sciences,* vol. 13, June, 1959) studied the bronchodilator action of five local anesthetics synthesized recently on dog's tracheal muscle preparations. Three of the compounds were also studied on guinea pig lung perfusion. Ephedrine was used as the control drug. The drugs thus tested were U-0394 (benzyl alcohol, α-[2-(diethylamino)]-1-phenoxyethyl hydrochloride), U-0910 (propiophenone, 3-dimethylamino 2-p-propoxyphenoxy,-hydrochloride), U-1614 (benzamide, N-[2 diethylaminoethyl]-2,4,6-trimethyl), U-7236 (diphenyl-ethylamine, 0,0′,dimethoxy-N,a,á,-trimethylhydrochloride ethenolate), and McN-A-29-11 (β-diethylaminoethyl 2,3,5,6, tetra methyl benzoate). Aqueous solutions of these drugs were used for experiment. Acetyl choline and histamine were used to induce contraction of tracheal musculature of the dogs and the dose of ephedrine required to reduce by 50% the contraction produced by acetyl choline was taken as unity.

In histamine-induced spasm, U-0394 and U-0910 brought about 50% reduction in a dilution of 1:10,000 but they were ineffective in a dilution of 1:100,000. The other three drugs were unable to counteract the spasm. Ephedrine antagonized the response in a dilution of 1:10,000 only. McN-A-29-11 was as potent as U-0394 and U-0910 in antagonizing the bronchospastic effect of acetyl choline on tracheal muscle but showed no activity in histamine-induced bronchospasm in the same dilutions on tracheal muscle and in guinea pig lung perfusions. U-1614 and U-7236 have a weak bronchodilator effect. Thus, of the five compounds studied, U-0394 and U-0910 were found to be more potent bronchodilators than ephedrine.

Urinary Excretion of 17-Hydroxycorticosteroids.—The normal levels of urinary 17-hydroxycorticosteroid excretion had not been reported for Indians until Patwardhan and Talavdekar (*Indian Journal of Medical Sciences,* vol. 13, June, 1959) did so. The mean values of 24-hour 17-hydroxycorticosteroid excretion as Porter-Silber chromogens were 7.02 mg. for men (range 3.8 to 11.4) and 5.3 mg. for women (range of 1.8 to 8.0). The mean 17 ketogenic steriod content by the Moxham-Nabarro method for men was 9.4 mg. (range 3.4 to 16.7) and that by the modified Norymbeski's procedure was 5.3 mg. (range 2.6 to 9.1). Thus the 17-ketosteroid values for Indians appeared to be a little low compared to those reported for normal American and British subjects.

Enteric Oxygen for Ascariasis.—D. D. Vora and co-workers (*Indian Journal of Medical Sciences,* vol. 13, June, 1959) studied the concentration of oxygen at the end of one and two hours after introducing oxygen into the intestinal lumen. Mongrel dogs who had been starved for 24 hours were given pentobarbital intraperitoneally. After opening the abdomen through a midline incision the small intestine was found to be completely collapsed and contained no liquids or gases. The intestine was brought out and 300 ml. of oxygen was introduced. About 200 ml. was required to fill the small intestine while the rest passed into the colon. The intestine was then tied just distal to the duodenum and proximal to the ileocecal valve. Blood vessels were not included in these ligatures so that the blood supply to the intestines was maintained.

At the end of one hour 54 to 100 ml. of gas was aspirated from the small intestines, their oxygen concentration varying from 84 to 90%. The concentration of oxygen which is therapeutically effective is above 80%, and this was found to be maintained in the small intestine at the end of one hour, while after two hours it was slightly lower but the quantity was not always sufficient for analysis. The anthelmintic action of oxygen can thus be definitely presumed to be exerted during the first hour after intragastric administration in vivo, but its action during the second hour is not predictable.

Therapeutic Insemination.—C. Kar (*J. A. Med. Women, India* 47:2, [May], 1959) stated that homologous therapeutic insemination may be used in the treatment of infertile couples. The semen is obtained preferably by masturbation, the husband having abstained from sexual intercourse for four or five days prior to the collection. This sample is used within two hours of collection after complete liquefaction has occurred. Insemination is accomplished within two to three days of ovulation and two to three inseminations are made between the 10th and 18th days of the menstrual cycle. If poor motility of the spermatozoa is revealed on examination of the semen, it is collected fractionally in separate test tubes and the first part used for insemination, as this is the part which contains the maximum number of motile sperms. The insemination is usually done with a syringe, but the cervical cap method may also be used.

In a series of 40 women sterile for 4 to 18 years, therapeutic insemination was done and in 19 pregnancy was achieved. In three women a single insemination was enough and in eight pregnancy resulted after two inseminations. Of the 19 pregnancies, 6 ended in full-term deliveries. Two had missed abortions in the fourth and fifth and four in the third and fourth months of pregnancy. The rest were still in different stages of pregnancy when last seen. The husband's semen had moderate oligozoospermia (6 to 20 millions per cubic centimeter) in 5 of these 19 cases. The author stressed the importance of proper technique of carrying out this procedure in order to achieve successful results.

Chlorpromazine for Preeclampsia.—S. Bose (*Journal of Obstetrics and Gynecology of India*, vol. 9, 1959) studied the action of chlorpromazine in 243 patients with preeclampsia and concluded that the drug helps to reduce blood pressure, the effect being more marked in patients with a relatively high blood pressure. Because the fall of pressure is transitory, prolonged and frequent administration is necessary to maintain this action. A few patients may even require increasing doses for control of the blood pressure. With the routine treatment, the maternal mortality was 0.54% and the uncorrected fetal mortality 5.7%. For the diagnosis of preeclampsia, a blood pressure reading of 130/90 mm. Hg associated with edema and/or albuminuria was taken as the criterion.

The patients were divided into three groups. Group 1 (84 patients) received 50 mg. of chlorpromazine and 50 mg. of promethazine intramuscularly every eight hours; group 2 (99 patients) received in addition 100 mg. of meperidine intramuscularly; and group 3 (60 patients) served as controls, receiving such sedatives as morphine, barbiturates, bromides, and magnesium sulfate. All patients were on a salt-restricted diet rich in proteins. Diuretics and hematinics were given if necessary. Severe headache and insomnia were the chief complaints. Ability to sleep improved after therapy, the maximum effect being noticed in group 2. Hangover was minimal in group 1. Of those in groups 1 and 2 severe giddiness was reported by 32%. Nausea and vomiting were easily controlled in these groups but were severe at times in group 3. A generalized burning sensation was sometimes a complaint. This was probably due to a vitamin deficiency. Other symptoms such as edema of the ankles and scanty urine responded equally well in all three groups.

The very first injection led to a fall in blood pressure of 20 to 40 mm. Hg. The systolic pressure showed a greater fall than the diastolic. The average duration of the fall in pressure was 6.8 hours and was most marked in group 2. Only seven patients required other hypotensive drugs for control of blood pressure, which were given in small doses due to a synergistic effect. Sixteen patients developed an abrupt pressure fall of 50 mm. Hg but recovered spontaneously. Chlorpromazine did not increase the urinary output any further. Edema and weight gain also were probably unaffected by the drug, the improvement being due to rest and the administration of diuretics. Albuminuria disappeared more quickly in the first two groups, along with the fall in blood pressure. The drug also did not affect the action of hematinics. None of the patients developed jaundice. The total serum protein level was unaltered except in one patient in whom the albumin/globulin ratio showed a change without any liver damage. Only one patient had increased blood urea. Vasospasm of the retinal vessels was most marked in group 3, but it was relieved by the therapy in the first two groups. Sixteen patients gave a history of previous toxemia.

Of those in the first two groups 18% and of those in the third group 25% required induction of labor. Chlorpromazine did not cause prolongation of labor, and the forceps delivery rate was 5% less than in the control group. True eclampsia developed in three primiparas, and accidental hemorrhage occurred in two patients. One patient in the control group developed cardiac failure. Maternal mortality was zero. The total fetal mortality was 4.5%. There was an increased number of premature babies. Fetal loss was greatest in the control group. The rate of occurrence of neonatal asphyxia did not vary in the three groups. Eight patients in group 3 who did not respond to routine treatment did well with chlorpromazine and meperidine. Pulmonary complications were generally absent.

Late Complications of Tuberculous Meningitis.—Nazarova and Mareeva-Khandricova (*Indian Journal of Child Health*, vol. 8, June, 1959) described a neurological complication after tuberculous meningitis that does not respond to specific or nonspecific treatment. A constant symptom of the disease is rigidity of the spinal column, often throughout its entire length but most marked in the lower thoracic and lumbosacral regions. Bending of the trunk backward or forward is limited and may even be impossible. Patients complain of pain in the back, legs, and popliteal space, which is aggravated by coughing and exertion. Scoliosis may be present while the normal lumbar lordosis is replaced by kyphosis. There is tenderness over the spine on percussion. X-ray shows widening of the spinal canal in the lumbosacral regions, usually involving three or four vertebrae. Osteoporosis may be present. All show evidence of strain of the long muscles of the back. Root pain due to involvement of the arachnoid membrane and nerve roots in the lumbar region and radiating to one or both lower extremities is another constant finding. Deformities at the knee and hip joints due to faulty posture or severe contractures may develop. Kernig's sign is positive, and there is neck rigidity. The knee and ankle jerks and abdominal reflexes are absent or sluggish, usually on one side. Wasting of gluteal and calf muscles may be present.

Sensory changes are few. Some patients have retention of urine. The gait is characteristic; when the whole spinal column is rigid, the trunk and pelvis sway around the vertical axis of the patient, the legs are bent, and the patient may walk on his toes. Examination of cerebrospinal fluid reveals absolute and relative protein-cell dissociation, xanthochromia, and evidence of partial or complete block. Patients complain of sudden acute pain radiating to the legs, the perineum, or the bladder during lumbar puncture. The puncture may prove dry, which happened in two patients. Four of 11 patients studied had a high protein content and an increased cell count. Tubercle bacilli were demonstrated in only one patient and another had cholesterol crystals in the spinal fluid. Most of the patients were undernourished, with marked anorexia.

All 13 children had been treated for 6 to 12 months with streptomycin for tuberculous meningitis. The signs and symptoms were due to the development of cholesteatomas in the subarachnoid space involving the nerve roots. In 11 patients these growths were removed surgically. The root pain which was the initial symptom occurred one to six years after the original attack of tuberculous meningitis, when the patients were otherwise perfectly healthy. A diagnosis was tentatively made of spondylitis or arachnoiditis after tuberculous meningitis; they received specific and nonspecific treatment, after which the root pain subsided, but other symptoms persisted and gradually progressed, requiring operation. Laminectomy under general anesthesia was performed and the vertebral arches of L2 to L4 or L2 to L5 were resected. These arches were usually more spongy in texture than normal. The thick and congested arachnoid showed no pulsations on exposure. The cholesteatomas were seen on moving the nerve roots aside as pearly, silky growths with an almost smooth surface, round or oval in shape, and enclosed in a compact vascular capsule. In one patient the growth was single but in the rest 2 to 11 growths were found. No fresh tubercles were seen on the arachnoid. Relief or complete disappearance of symptoms followed removal of these tumors. The postoperative course was uneventful. Specific antituberculosis treatment was given for a month after the operation. Most patients recovered completely. Morphologically these tumors resembled congenital epidermoid cysts.

Treatment of Eclampsia.—M. K. K. Menon (*Journal of Obstetrics and Gynecology of India*, vol. 9, June, 1959) treated 1,151 patients who had eclampsia with various sedatives from 1938 to 1950 with disappointing results, the maternal mortality being about 15.1%. Sodium thiopental was used in 1951 and the recurrence rate of the convulsions was reduced slightly, but the maternal mortality remained high. Antepartum eclampsia resulted in the highest mortality, 17% compared with 6.5% in intrapartum and 9.3% in postpartum eclampsia. The longer the interval between the onset of convulsions and delivery, the greater the death rate. In selected patients with antepartum eclampsia, cesarean section reduced the maternal mortality. The author then gave phenothiazine derivatives to a series of 402 patients. The treatment consisted of 25 mg. of chlorpromazine and 100 mg. of meperidine given intravenously in 20 ml. of 5% dextrose solution, on admission to the hospital; 50 mg. of chlorpromazine and 50 mg. of diethazine were given intramuscularly; an intravenous drip of 20% dextrose solution containing 200 mg. of meperidine was then started and allowed to run in slowly, the rate depending on the response. The intramuscular injections of 50 mg. of chlorpromazine and 50 mg. of diethazine were given alternately every 4 hours for 48 hours.

If convulsions were uncontrolled in 8 to 10 hours, and the patient was not in labor, cesarean section was performed under local anesthesia. If labor had commenced, the membranes were artificially ruptured and delivery was assisted by outlet forceps. With this treatment, the maternal mortality was reduced to 2.2%, the lowest ever obtained by the author. Twelve cesarean sections were done in this series and no mother was lost because of the operation. In this series, 60% showed a satisfactory drop in blood pressure and 95% had a good urinary output. The recurrence rate of convulsions was 15% and pulmonary edema was seen in only five patients. Hyperpyrexia occurred in only three patients while it had occurred as the terminal event in 25.3% of patients treated by earlier methods. Posteclamptic psychosis was rare and shock was absent even with cesarean deliveries. The maternal mortality in patients with severe eclampsia was 2.7% in this series and the perinatal infant mortality was 32.1%. The author believed that this therapy was reasonably effective in controlling convulsions.

In another study in the same issue N. S. Devi found that chlorpromazine was useful in warding off imminent eclamptic convulsions. In this series maternal mortality was nil and fetal mortality was 13.6%.

Toxemias of Pregnancy.—O. Francis (*Journal of Obstetrics and Gynecology of India*, vol. 9, June, 1959) studied 200 consecutive patients with toxemias of pregnancy in order to correlate biochemical and ophthalmoscopic findings with the clinical data; 172 had preeclampsia, 14 had eclampsia, and 14 had essential hypertension. The levels of serum protein and serum albumin were lower among the toxemic patients than in those with normal pregnancy. The fall in these values was more marked in preeclampsia than in eclampsia, and greater in the severe cases of preeclampsia than in the milder ones. The blood uric acid level was raised in preeclampsia and eclampsia and this finding served to differentiate these patients from those with hypertension. This level was reduced in patients who responded to medical treatment. There was no relation, however, between the level of blood uric acid and the development of convulsions. In patients with hypertension both blood urea and uric acid remained within normal levels and the urea/uric acid ratio was high while this ratio was lowered in those with preeclampsia and eclampsia. This served as another differentiating factor. The blood uric acid level was less in those with eclampsia than in those with severe preeclampsia. For funduscopy, the patients were divided into two groups, those with a blood pressure level below and those with a blood pressure level above 160/100 mm. Hg.

A series of 100 patients (37 with mild and 63 with severe hypertension) was studied. Of those with mild hypertension 23 patients and of the other group 25 patients had no changes in the eyegrounds. Of the 10 eclamptics included in this study, 4 had no eye changes. Of 32 patients with mild preeclampsia, 24 and of 35 with severe preeclampsia 20 showed no eye changes. Of 23 patients with hypertension, 18 showed eyeground changes. Eyeground changes and retinitis were seen in patients with severe toxemia as revealed by high blood pressure, severe albuminuria, edema, and the need for termination of pregnancy. The series included 11 patients with retinitis showing hemorrhage and exudates, 2 in the mild group and 9 in the severe group. These cleared under medical treatment in nine patients (two mild and seven severe) and in the remaining two, pregnancy was terminated.

Urinary and Blood Chemistry and Gestoses.—Purandare and Agashe (*Journal of Obstetrics and Gynecology of India*, vol. 9, June, 1959) stated that the excretion of all the amino acids was affected during pregnancy but all others except histidine showed minor changes which were not significant statistically. Histidine is not necessary for maintenance of nitrogen equilibrium but its presence is essential for body growth. It increases in amount in the presence of an actively growing fetus and the weight of the newborn infant varies according to the amount available in the mother's blood. Estimations of urinary histidine showed that in nonpregnant women it varied up to 150 mg. in 24 hours while in normal pregnancy it ranged from 300 to 600 mg. The presence of a dead fetus and toxemia adversely affected this test. Urinary histidine occurred in a free and a bound form. The authors found that the amounts of free histidine did not vary markedly in normal pregnancy and toxemia, although the values in toxemia were slightly reduced. The test for free histidine became completely negative within 10 days of expulsion of the placenta, while its presence depended on the existence of a functioning placenta in the body. The amount of total histidine was reduced as the severity of a toxemia increased.

Blood urea levels in normal pregnancy showed a slight tendency to decrease as pregnancy advanced but in toxemia it steadily continued to increase. The blood urea figures gradually reached normal levels within 10 days of delivery in all patients, showing a progressive rise to normal levels during normal pregnancy and a progressive fall even below the normal figures in toxemic patients. The blood uric acid level showed a progressive rise from 2.6 to 3.1 mg. per 100 ml. in normal pregnancy from the fourth to the ninth month. The postnatal figures did not vary much in normal and toxemic patients and readings obtained in patients whose pregnancy was complicated by anemia, cardiac conditions, or toxemia also did not show significant variations from those with normal pregnancy. The urea clearance showed a progressive decrease with a sudden improvement in the seventh month both in those with normal and those with complicated pregnancy. The diminution in urea clearance was marked as the severity of toxemia increased toward term. The values reached normal within 10 days after normal delivery.

In patients with mild toxemia, a sudden improvement was seen within the first 24 hours of delivery which might again have dropped very low and then started to rise gradually till the normal level was reached within 10 days. The improvement was not so marked in those with severe toxemia but the values gradually returned to normal within 10 days. Values of blood urea varied inversely with the urea clearance. Study of histidine excretion showed an increase in the free histidine in urine in normal pregnancy from traces in the fourth month to about 300 mg. in the seventh month, when a sudden peak was noted. In patients with mild toxemia, the level decreased as pregnancy advanced. No correlation was noted between urea clearance and histidine excretion. A progressive fall was seen in the postpartum period in patients with normal pregnancy, approaching zero by the seventh day, and in those with mild and severe toxemia it was absent within the first 24 hours after delivery.

Estimations of plasma proteins by paper electrophoresis showed a tendency toward a fall in total proteins and albumin in normal and toxemic patients. Depending on the severity of the condition, the drop was greater the higher the initial level in the first half of pregnancy. An increase in globulin occurred which varied inversely with the initial levels. There was a definite relation between the level of serum albumin and the presence of toxemic symptoms. A very low serum albumin level in early pregnancy indicated a bad prognosis. An increased production of total globulins was noted in patients with normal pregnancy and preeclampsia, but an actual fall in globulin level occurred in those with eclampsia. In spite of the fall in total globulin, the gamma globulin showed a rise in patients with eclampsia. The alpha-1, alpha-2, and beta globulin levels increased in patients with normal pregnancy and preeclampsia but these showed no rise in those with eclampsia although fibrinogen levels were increased significantly.

A rise in fibrinogen was also seen in patients with normal pregnancy and preeclampsia but this was not so marked as in those with eclampsia. In patients with concealed type of accidental hemorrhage, hypofibrinogenemia or actual afibrinogenemia was seen and in those who had placenta praevia with bleeding, no such fall was observed. Patients with essential hypertension complicating pregnancy did not show a rise in fibrinogen.

Vaginal Cytology.—T. S. Cheema (*Journal of Obstetrics and Gynecology of India*, vol. 9, June, 1959) made vaginal smears of 101 patients with erosions, polyps, and ulcers of the cervix. Smear examination was followed by biopsy or histological examination of the cervix removed at operation. A minimum of three smears were studied before a report of negative findings was made. Sections of the cervix were available for examination in 100 of these patients. In 42 patients the sections showed a definite carcinoma. The vaginal smear was frankly positive for cancer in 40 patients. This included one with papilliferous adenocarcinoma of the ovary and one with primary carcinoma of the vagina. Four patients had negative smears repeatedly, though biopsy definitely showed a carcinoma. Of 57 patients with histological findings negative for malignancy, 3 showed atypical smears. Two had Trichomonas infection locally and one had a signet-ring type of cell, the biopsy report being acute inflammation of the cervix. There were no false-positive smears in this series. The smears may have helped in prognosis as happened in two patients whose malignant cells were cast off in sheets while in one numerous mitotic figures were present. Both patients had a rapid downhill course. The author concluded that a frankly positive vaginal smear with a clinical diagnosis of malignancy calls for immediate treatment for carcinoma rather than waiting for a biopsy report.

Hydralazine and Reserpine for Preeclampsia.—M. K. K. Menon (*Journal of Obstetrics and Gynecology of India*, vol. 9, June, 1959) stated that an ideal hypotensive drug for preeclampsia should lower the blood pressure and maintain it at normotensive levels throughout pregnancy without causing any adverse effects on either the mother or the fetus. With this view, hydralazine was given to 110 and reserpine to 183 patients with preeclampsia. Cases of hypertension complicating pregnancy with or without superimposed preeclampsia were excluded from study. The patients were divided into groups with mild (group 1) and severe (group 2) manifestations (hypertension, edema, albuminuria, headache, visual disturbances, and restlessness). All were hospitalized and treated with bed rest, sedation, salt-poor diet, and acetazolamide for 48 hours after which hydralazine and reserpine but no sedatives were given. Patients in group 1 received 50 mg. of hydralazine orally at first. The dose was increased by 50 mg. daily till the blood pressure became normal. This dose was maintained for 48 hours and then gradually reduced by 50 mg. daily.

Patients in group 2 did not respond satisfactorily to hydralazine by mouth and were therefore given the drug intravenously in an initial dose of 20 mg. Injections were repeated depending on the response but more than three doses a day were not given. Reserpine was given in doses of 1 mg. three to six times a day by mouth to patients in group 1. Those in group 2 were given the drug parenterally. The average dose for these patients was 2.5 to 5 mg. every 4 to 6 hours but not more than 20 mg. was given in 24 hours. Other patients with preeclampsia treated without these drugs served as controls. With oral doses of hydralazine in patients in group 1, the response was good in 30% and with reserpine the response was good in 60.4%. The fetal salvage rate or the rate of induction of labor was not reduced by oral doses of hydralazine in these patients. It took an average of 8.2 days to get the normotensive effect while in the control group this interval was 6.2 days. The drop in blood pressure was slow and gradual. No untoward symptoms were observed.

With reserpine also there was no marked improvement in the premature birth rate or the perinatal death rate. Of 58 patients receiving the drug orally, only one developed eclampsia while in the control group 4 mothers died. The average time required to reach the normotensive level with reserpine was 5.3 days compared with 6.2 days in the control group. Seventy patients in group 2 received hydralazine. Response to oral therapy was unsatisfactory. When the drug was given parenterally, the blood pressure started falling steeply within about 10 minutes of injection. The maximum drop was 55 mm. Hg systolic and 30 mm. Hg diastolic; 75% came down to normotensive levels within three hours of injection. The hypotensive effect lasted 3 to 26 hours. The urinary output was adequate in 96%. The drug on the whole was useful in controlling blood pressure in these patients and both the prematurity rate and the perinatal death rate were reduced (16.6% and 13.3%, respectively, compared with 21.3% and 19.3% in the control group). One mother in this group developed eclampsia. The hypotensive effect with hydralazine given intravenously was almost immediate, marked, dependable, and lasted the longest of all the hypotensive therapies given. Side-effects were negligible. Tachycardia was constantly seen, 3 patients complained of palpitation, 10 had hot flushes, and 3 had headache and vomiting.

With reserpine, no appreciable fall occurred for almost 45 minutes after the injection. The average time required to reach the normotensive level was 4.6 hours, the maximum fall observed being 50 mm. Hg systolic and 30 mm. Hg diastolic. The urinary output was adequate in 90%. The premature birth rate and the perinatal death rate were not improved by reserpine. Two patients developed eclampsia. The chief side-effects were drowsiness, nasal congestion, gastrointestinal upset, and urticaria. Fifty patients with preeclampsia in labor were given reserpine intravenously. They had received no hypotensive drugs prior to labor. In only 14 was an appreciable fall noted; 21 did not respond at all. It took about 45 minutes for the blood pressure to drop and the drop was sustained for 1.8 hours; 35 needed a second injection after 4 hours; and 2 developed intrapartum eclampsia in spite of the reserpine.

Hypotensive Drugs and Pregnancy.—O. J. Shah (*Journal of Obstetrics and Gynecology of India*, vol. 9, June, 1959) stated that the intravenous administration of protoveratrine causes a rapid fall in blood pressure in hypertensive pregnant women which lasts for two or three hours and is at times associated with severe vomiting and collapse. Intravenous administration of reserpine, on the other hand, causes a relatively smaller reduction of blood pressure which occurs after a latent period of about 2 hours and lasts about 12 hours. A preparation causing a rapid and moderate fall of blood pressure lasting for some time and with no side-effects should be desirable in pregnant women with hypertension. The author gave a preparation parenterally which combined optimal doses of protoveratrine and Rauwolfia alkaloids, for optimal action with elimination of undesirable side-effects. This was given intramuscularly and the dose was repeated after four hours if no fall in blood pressure was recorded by that time. A maintenance dose was given when the pressure started rising after 12 to 18 hours. Blood pressure readings were taken every half hour for the first 4 hours, then every 3 hours for 12 hours and later three times a day.

A series of 24 pregnant women with hypertension, 17 with preeclampsia, and 7 with hypertension complicating pregnancy were thus treated. Two patients were given intramuscular injections of 50% magnesium sulfate solution to control severe convulsions. No other drugs or sedatives were used. Five patients with preeclampsia did not respond at all to the hypotensive injection. The remaining patients responded satisfactorily, the systolic pressure showing a fall of 5 to 65 mm. Hg and the diastolic pressure showing a fall of 15 to 40 mm. Hg after the first injection. The action appeared within about one hour and the peak was reached within four hours. The effect lasted for 12 hours and in one patient the reduction was maintained for five days. Clinical improvement ran parallel with the blood pressure response. The fetal mortality was, however, unaffected. Side-effects such as transient giddiness or vomiting were minimal.

SWEDEN

Neurological Complications After Myelography.—Since no neurological side-effects of myelography with 20% methiodal had been reported, Lennart Söderberg and co-workers (*Acta orthop. scandinav.* 28:220-223, 1959) reported that in the last six years myelography with this water-soluble contrast medium was performed about 760 times at the Malmö General Hospital. There were serious complications in three patients. After premedication with 0.5 ml. of morphine-scopolamine the patient was placed on the side to be examined, the head of the examination table was raised, and 1 ml. of ephedrine was given subcutaneously. Spinal anesthesia was induced, after which 10 ml. of methiodal was slowly injected. Lateral, oblique, and posteroanterior films were taken with the patient in the lateral, semiprone, and prone positions. After the examination the patient was kept in bed for eight hours with the head of the bed raised. The complications occurred in three men, aged 43, 39, and 53 respectively. These complications were obstinate and regressed but slowly. During a follow-up of 6 to 24 months, symptoms of varying severity still persisted. The question arose whether these complications might have been due to the contrast medium as such, to hypersensitivity, to incomplete anesthesia (epidural deposition), or to the spinal anesthetic agent. The authors concluded that since myelography was so valuable in the exact diagnosis of disk protrusion when an operation was indicated and since methiodal was the best contrast medium available for this purpose, that this method was justified despite the slight risk of complications.

Diaphragmatic Mobilization.—Although the need for a space-diminishing procedure after pulmonary resection for tuberculosis has decreased greatly in the last two years, many patients are still seen for whom a space-diminishing operation is indicated. V. O. Björk (*Acta chir. scandinav.* 117:18-26, 1959) believes such an operation is indicated when (1) more than one lobe is resected, (2) there is bilateral widespread tuberculous infiltration, (3) resection is performed for tuberculous empyema, and (4) resection with decortication is performed on a patient who previously had a pneumothorax and in whom the remaining pulmonary tissue is too fibrotic to fill the space. A pilot study was made with various types of resection in 17 cases, and none of the patients died. No special complications occurred. Diaphragmatic mobilization and resuturing at a higher level gave results described as follows: In two patients in whom this operation was performed in conjunction with left pneumonectomy after a preliminary apical four-rib or five-rib thoracoplasty, an excellent result was obtained. The mediastinal hernia from the right side was small. Although the diaphragmatic operation is preferred in such patients to a total thoracoplasty, the same result would probably be obtainable by cutting the phrenic nerve, which is a much simpler procedure.

In a patient with the diaphragmatic operation and right upper lobectomy 32% of the total oxygen uptake postoperatively occurred on the right side. This value is within the range of 27 to 49% oxygen uptake found in a group of 15 patients reported on two years ago who had right upper lobectomy and osteoplastic roof thoracoplasty. The ipsilateral ventilation likewise was 32%, which, however, was less than that found after osteoplastic thoracoplasty (37 to 69%, mean 50%). After resection of the right upper and middle lobes and diaphragmatoplasty the dislocated right lower lobe did not function. The same observation was made after resection of the left upper lobe plus the superior segment of the left lower lobe. In both of these patients who had complete loss of function despite a mobile diaphragm, no oxygen uptake or ventilation could be demonstrated on the treated side and there were clinical signs of stenotic breathing. Bronchography showed that when the remaining basal segments were dislocated to the apex of the thorax by the new position of the diaphragm, the bronchus was distorted and kinked in such a way as to make ventilation impossible.

In a patient with right lower and middle lobe resection and diaphragmatoplasty the ipsilateral function (27% oxygen uptake) was as good as after osteoplastic thoracoplasty (24 to 25%) or conventional upper thoracoplasty (23 to 26%). The ventilation (33%) was also as good as after other space-diminishing procedures (34 to 39%). After resection of the apicoposterior and anterior segments of the left upper lobe and diaphragmatoplasty, the ipsilateral oxygen uptake (25 to 29%) was similar to that found after this resection plus osteoplastic thoracoplasty (27%). The ventilation of 11 to 18% after the diaphragmatic procedure, however, was significantly lower than the 27% registered after left-sided osteoplastic thoracoplasty. The cosmetic result was excellent. Of 17 patients 16 had no postoperative abdominal symptoms and one complained of eructation.

Björk concluded that the diaphragmatic operation could be used only after resection of the basal portions of the lung, then the remaining function would be as good as after other procedures, and, while osteoplastic thoracoplasty was the preferred technique to diminish the thoracic cavity, the diaphragmatic operation was not recommended.

Coagulation and Extracorporeal Circulation.—Nilsson and Swedberg (*Acta chir. scandinav.* 117:47-54, 1959) studied the coagulation in 17 patients subjected to cardiac operations with extracorporeal circulation using a bubble pump-oxygenator. This observation was prompted by experiments on dogs in which extracorporeal circulation was often found to be accompanied by diffuse fatal hemorrhages, and coagulation studies from some of these animals showed that extracorporeal circulation was followed by fibrinolysis. Plasmin activity in the blood was regularly increased during the operation. In some of the patients plasmin activity was increased even before perfusion. Independent of the presence or absence of plasmin activity before perfusion, the activity regularly increased during perfusion. The fibrinogen concentration decreased from an average of 0.29% before to 0.13% after perfusion. At the same time a marked decrease was noted in the antihemophilic globulin (AHG) and factor V values. The plasminogen and proactivator content decreased. The drop in the prothrombin and hemophilia B factor was only moderate during perfusion. The thrombocyte count regularly decreased but not below 98,000 per cubic millimeter.

The fibrinolysis observed in these patients and the subsequent drop in fibrinogen might be regarded as moderate. A contributory cause might be the activation of the fibrinolytic system being limited to such a short period. It should be emphasized that fibrinolytic activity alone does not necessarily cause hemorrhage. On the other hand fibrinolytic activity and the hypofibrinogenemia in combination with such other coagulation defects as thrombocytopenia, AHG-deficiency, and factor V deficiency, may be contributory factors in the causation of bleeding. The fibrinolysis was therefore regarded as sufficient to indicate fibrinogen therapy.

All of these patients received fibrinogen in varying amounts (2 to 15 Gm.) after the perfusion. There was no evidence of bleeding except in one patient who incurred a cerebral injury during the operation and at the same time developed strikingly high plasmin activity. After administration of 15 Gm. of fibrinogen the hemorrhage decreased. As slight fibrinolytic activity occurs during most surgical operations, a study was made of the blood for changes in coagulability during 14 operations on the lung and heart for comparison. Increased plasmin activity was demonstrable in the blood during these operations, but the increase was less than in those for whom extracorporeal circulation was used. The decrease in fibrinogen, like that in the other coagulation factors was also much less than that noted during extracorporeal circulation.

The authors concluded that fibrinolysis during extracorporeal circulation was most pronounced in those patients with the most pronounced metabolic disorders (pH-decrease, CO_2-increase, lactic acid increase, and potassium decrease) and in whom the blood pressure could not be maintained. The cause of fibrinolysis during extracorporeal circulation is not properly understood, but it may be due to such contributing factors as released activators from injured tissues in the same way as in other major operations, and the metabolic changes are also probably significant.

Plasma-Heparin Concentration.—Extracorporeal circulation is made possible by rendering the blood incoagulable with the aid of heparin. As a rule the patient is given 1.5 to 3 mg. of heparin per kilogram of body weight and to the blood that is used for filling the heart-lung machine 15 to 30 mg. per 500 ml. of donor blood is added. As it seemed from earlier experiments that at the lower heparin dosage there was some initiation of coagulation and it was thought by Åke Senning (*Acta chir. scandinav.* 117:55-59, 1959) that this might give rise to disturbances of coagulation, plasma-heparin determinations were made. Each of 13 patients was given citrated blood before and after extracorporeal circulation. The patients received 4 mg. of heparin per kilogram of body weight just before the perfusion cannulas were inserted. The donor blood which was used to fill the heart-lung machine contained 13 mg. of heparin in 50 ml. of 5% dextrose solution per 450 ml. of blood. When perfusion had been terminated and the heart had taken over the circulation, 15 mg. per millimeter of protamine chloride was injected in two or three divided doses to give a coagulation time of seven minutes or less.

After perfusion 1 Gm. of fibrinogen was also given. After administration of 4 mg. of heparin per kilogram of body weight the concentration of heparin in the plasma ranged from 7.6 to 4.6 I. U. per milliliter. During the preparatory phase of the operation these readings fell by a mean of 1.8 I. U. per milliliter per half hour; 15 mg. of heparin in 50 ml. of 5% dextrose solution added per 450 ml. of donor blood produced an average plasma-heparin concentration of 4.5 I. U. per millimeter. During extracorporeal circulation the plasma-heparin readings fell by a mean of 0.6 I. U. per milliliter per hour. The author concluded that 4 mg. of heparin per kilogram of body weight was a suitable dose; 15 mg. of heparin in 50 ml. of 5% dextrose solution seemed to yield somewhat too low a plasma-heparin concentration. If the preparatory phase before by-pass was long or if perfusion was protracted, additional heparin should be given to reduce the risk that coagulation would be initiated by heparin elimination. Heparin rebound did not seem to occur in the period immediately after neutralization of heparin with protamine.

Tetralogy of Fallot.—Among persons with congenital anomalies consisting of pulmonic stenosis coexistent with ventricular septal defect, all grades may be found, from slight stenosis with large left-right shunt and possibly elevated pulmonary arterial pressure to severe stenosis producing right-left shunt with a small pulmonary arterial flow and low pressure. It would further seem that during the years of growth the pattern may alter so that left-right shunt may decrease in size and gradually be transformed into a right-left shunt, at first during exertion and later at rest. Åke Senning (*Acta chir. scandinav.* 117:73-81, 1959) reported a series of 27 patients with ventricular septal defect, pulmonic stenosis, and right-left shunt who were subjected to open correction of the defects, using extracorporeal circulation. Five had already undergone shunting operations and two had had the Brock operation.

Among the 20 in whom the open-heart operation was the primary measure there were four deaths. In all of the fatal cases there was an anomalous coronary artery crossing the infundibulum in the right ventricle. One of the patients who underwent reoperation after palliative anastomosis died of septicemia. The mortality in patients primarily treated with open-heart correction is somewhat higher than the primary mortality in shunting operations, but it may be expected to fall as experience is gained. In the present series anomalous coronary arteries traversing the infundibular stenosis prevented adequate enlargement of the outflow tract in three patients and these patients died. A systolic murmur was still audible in most of the survivors when last seen. Catheterization, however, revealed no persistent defects of hemodynamic significance. The author concluded that open operation was appropriate for Fallot's tetralogy. Patients who had previously undergone palliative shunting operations should also be considered for an open operation.

Pulmonary Stenosis.—During 1,000 consecutive heart catheterizations performed at the Pediatric Clinic of Karolinska Hospital 72 patients were found to have pulmonary stenosis. Of these, 28 patients were operated on. In selecting patients for operation, a right ventricular systolic pressure of 75 mm. Hg was generally considered the boundary line separating the mild from the moderately severe types of stenosis. Patients with levels above this showed marked clinical impairment of physical capacity, marked electrocardiographic evidence of right ventricular hypertrophy and strain, or both. Danae Ikkos (*Acta chir. scandinav.* 117:82-88, 1959) reported that three types of operations were used; 19 patients were operated on by Brock's transventricular approach, 7 by the transpulmonary artery method, and 2 were operated on for relief of an isolated infundibular stenosis by infundibulectomy, one by the transventricular, and one by the open approach.

Two of the 28 died in connection with the operation. One of these had severe decompensation and the other had an associated large atrial septal defect, undiagnosed before the operation. Of the remaining 26 patients 25 were reexamined postoperatively. Cardiac catheterization was performed on all 25 and angiocardiography on 10. All showed a postoperative decrease in the systolic pressure of the right ventricle (RVP). The typical stenotic murmur which preoperatively showed a peak in either mid or late systole changed in both position and character. In electrocardiography a statistically significant reduction in the degree of axis deviation was observed postoperatively, with most returning to normal values. Correlative signs of right ventricular hypertrophy also showed regression toward normal values after operation. Although the heart volume was in most patients within the normal limits preoperatively, the operation resulted in a decrease of the heart volume in these. This decrease was more pronounced in patients with a cardiac enlargement preoperatively.

The author concluded that it was of interest that when the data reported by the different operation groups were taken together there was a highly significant correlation between the preoperative and postoperative systolic RVP. This finding showed that the selection of the time for operation might be of more importance than the operative technique used and that ideal results might not be uniformly obtainable by any method in patients with severe and prolonged right ventricular hypertension.

Open Versus Closed Treatment of Pulmonary Stenosis.—V. O. Björk (*Acta chir. scandinav.* 117:97-101, 1959) reported a series of 21 patients operated on for relief of pulmonary stenosis. These patients had an intact ventricular septum. Those with a RVP of 80 mm. Hg or more were accepted for operation. The highest RVP encountered was 170 mm. Hg in a 3½-year-old child. The average systolic pressure in the right ventricle was 116 mm. Hg. Seven patients were operated on with the transventricular (Brock) method, 4 with a closed transarterial (Söndergaard) method, and 10 with an open transarterial (Björk) method using inflow occlusion in normothermia. It was found that the Söndergaard method was unsuitable for small children. The author had to improvise the third method and found it to be such an easy technique that he has used it in preference to the others ever since. There were no deaths in the whole series.

Björk considered open valvotomy in normothermia technically easier to perform in all age groups than the other operations. The anatomic result was far superior. The time limit allowed is adequate if no unnecessary procedures are undertaken. Perfusion of oxygenated blood is better omitted as being unnecessary. No clamps should be applied to the aorta or peripherally to the pulmonary artery. An interval of 15 seconds should be allowed after the inflow occlusion before the clamp over the incision is removed. The field is then dry and no time is lost in suctioning blood. When the clamp is reapplied over the incision after the valvotomy, it is better to fill the right ventricle and pulmonary artery with dextrose solution than to release the vena cava. This was done once but the forceful ejection of blood from the hypertrophied right ventricle made it impossible to place the clamp over the incision and another inflow occlusion had to be made for this purpose. This was the case with the longest occlusion, i. e., 2 minutes and 30 seconds, where 30 seconds were lost for the second inflow occlusion and reapplication of the clamp over the incision. When this technique is followed in detail its performance requires no more than two minutes. Hence hypothermia is unnecessary. After the inflow occlusion is made it takes about 20 minutes before the systemic blood pressure reaches zero. Once the caval occlusion is released normal blood pressure is reached within 5 seconds.

Constrictive Pericarditis.—Different types of acute pericarditis have long been regarded as precursors of the constrictive form. Tuberculous pericarditis was formerly associated with a mortality approaching 90%. Purulent pericarditis was almost always fatal unless drained surgically. The rheumatic forms were only part of a disease in which the myocardial and endocarditic processes were of foremost importance. Another question was whether or not rheumatic pericarditis led to the chronic constrictive form. Lennart Johansson (*Acta chir. scandinav.* 117:104-107, 1959) reported on the experience gained from more than 50 patients with constrictive pericarditis of whom 50 had hitherto been treated surgically. The postoperative mortality in the series was six, and one late death was due to progressive pulmonary tuberculosis. The first 38 patients to be treated were followed up as completely as possible. All of the deaths occurred in this group, leaving 31 patients for long term follow-up. Of these, 27 had resumed occupations varying in strenuousness from tree-felling to domestic tasks. Cardiac catheterization of these 27 patients showed conditions to be normal in 22, but further examination including pulmonary function, roentgenograms, and electrocardiography left only 3 patients with fully normal findings.

The author concluded that the cause of chronic constrictive pericarditis was usually infectious. Tuberculosis predominated among the infections leading to the condition. The portion of the heart of greatest importance from the standpoint of hemodynamics was best approached by a left thoracotomy. The wish to free the left ventricle first was founded on angiographic observation that the left ventricle was usually of normal or less than normal size while the right was enlarged. Consequently, the inability of the left ventricle to receive a sufficient amount of blood was one of the major factors, and it followed that this portion of the heart should be freed first. The decortication of the right ventricle should be accomplished next.

Pericardiectomy for Constrictive Pericarditis.—Acute pericarditis leads in most patients to adhesion of the pericardial layers which produces no clinical symptoms and is usually detected only at autopsy, but, in a relatively small number of patients, chronic constrictive pericarditis may develop after a widely varying period of latency. This is marked by adhesion and dense fibrous thickening of the pericardial layers which are not infrequently calcified to a hard husk hindering the normal function of the heart. Surgery must then be considered. Arne Malm (*Acta chir. scandinav.* 117:116-123, 1959) reported that pericardiectomy was performed on a series of 15 patients. While tuberculosis is generally held to be the most frequent cause of constrictive pericarditis, evidence of tuberculous causation was present in only three of these patients; in three others the origin was almost certainly rheumatic, and in four the condition was a sequel of acute nonspecific pericarditis. In the largest group comprising the remaining five patients, the etiological factor was wholly unknown.

Attention was drawn to the diagnostic value of cardiac catheterization with its characteristic pressure changes. Angiocardiography elicited nothing of diagnostic value. The aim of surgery should be total pericardiectomy, but the desire for radical measures in the individual patient should be weighed against the dangers of resecting a firmly infiltrating and calcified pericardium from a poorly functioning and thin-walled myocardium. This series included two primary and three late deaths. Of the remaining patients, four were improved, two much improved, and four became subjectively and objectively asymptomatic. Preoperative atrial fibrillation, high-grade hypoproteinemia, and symptoms of long duration were unfavorable prognostic signs from the surgical standpoint. Calcification of the pericardium was found to be of minor importance. The author concluded that a patient with constrictive pericarditis combined with atrial fibrillation and high-grade hypoproteinemia, in whom the symptoms were of several years' duration, was a poor surgical risk. Operations for constrictive pericarditis should be performed early in the course of the disease, before the progressive myocardial atrophy and liver insufficiency become irreversible.

Closed Versus Open Treatment of Septal Defects.—V. O. Björk (*Acta chir. scandinav.* 117:166-173, 1959) reviewed a series of 47 operations for atrial septal defects. The circular suture method was used in 23 patients. There were no deaths in this group. Atrioseptopexy was used on one patient with a high defect and abnormal venous return. It was attempted on another patient but was abandoned, as a circular suture was found to cause less obstruction to the superior vena cava. Open closure with the aid of a heart-lung machine was used on three patients. One of these died from pulmonary complications and another developed sternal osteitis. The perfusion time varied between 9 and 19 minutes. Björk abandoned this method, however, as the results were so much better when closure was performed under hypothermia.

Twenty uncomplicated atrial septal defects of the secondary type were operated on with no deaths by use of open closure with the aid of hypothermia and coronary perfusion of oxygenated blood. One 15-month-old child who had a secondary defect complicated by fibroelastosis of the left ventricle died two days after operation from failure of this ventricle. The advantage of coronary perfusion is twofold: it diminishes the risk of ventricular fibrillation and it prevents air embolism. The circular suture method was found to be the best of the closed methods. Open closure with the aid of hypothermia and coronary perfusion was, however, regarded as the operation of choice for all patients. Complete closure was most easily obtained under direct vision. Anomalous venous return was more conveniently dealt with when the approach was open. Mortality was not increased by the use of hypothermia and an open technique.

CORRESPONDENCE

PERSONAL EXPERIENCE WITH SOCIALIZED MEDICINE

To the Editor:—Time is the only factor that distinguishes the two systems of socialized medicine, *namely, that system immediately identifiable as* socialized medicine, authorized by legislature, with establishment of public institutions and bringing into effect laws controlling its practice, as is now the case in Great Britain, and the system of disguised socialized medicine, which is supported by legal regulations and masked by a network of seemingly private committees and insurance companies. The administration of the social medical laws is transferred to these organizations, which then possess legal status. For many years I gained experience with the second type of socialized medicine in the Netherlands. This type is far better adapted to delude the medical profession than is identifiable socialized medicine.

About the turn of the century in the Netherlands there existed the so-called physician funds, founded and conducted by private physicians. Guided by humanitarian instincts, they provided medical care to low-income groups for a negligible weekly premium. These private institutions, scattered over the country, did not have any mutual relationship. Gradually they were taken over and incorporated by private insurance companies. Many unsuspecting physicians were pleased, because their administrative burden was removed. Up to the time of the German occupation of the Netherlands, the income from private practice was generally greater than the income paid by the insurance companies. The Nazi regime imposed compulsory socialized medicine in the Netherlands, but in a limited degree. After the liberation the successive socialistic governments maintained all these regulations, gradually increasing their spectrum. At first every employee and his family earning less than 2,500 guilders ($700) a year was compelled to register for medical care. The premium was withheld from the wages, and at the same time a premium paid by the employer was added. The income limit was increased to 3,400 guilders ($900) a year and, step by step, from year to year, the limit of compulsory insurance was raised and is now 6,900 guilders ($1,800). Entire groups of employees, sailors, officials, and the aged were added piecemeal to this insured category, but never at the same time. At present about 95% of the population is compelled to accept socialized medicine by this subtle, indirect mechanism.

Compromise of Quality of Medical Care

Under socialized medicine the unlimited availability of medical care, treatment, and preventive medicine entails overcrowded waiting rooms and waiting lists for nonemergency hospital treatment. There is no time for a skillfully taken history and an adequate examination. Under this system a conscientious physician will attempt to salvage his responsibility by referring serious cases to a specialist. As a result of this situation the aforementioned committees have compelled the physician to refer no more than the average referring rate of the area of their jurisdiction, at the risk of a financial penalty subtracted from his professional insurance income.

The rising cost of drugs and diagnostic procedures requires a continuing increase of premium payments. Another semiofficial committee is appointed to arbitrarily compose a list of drugs which the physician must choose from. This committee also specifies how much of any drug a physician may prescribe. A drug not mentioned in this list cannot ordinarily be prescribed, even if the patient is willing to pay for it. Infringement of this rule is punishable by subtracting the cost of the drug from the physician's income.

Another rule is, if the average cost of prescriptions of a physician is over 10% of the average cost of prescriptions in the area, this excess shall be subtracted from his income. A host of officials and offices are needed to calculate this material. The committees and insurance companies maintain the fiction that every drug deemed necessary by the physician can be prescribed. To preserve the fiction of this system another committee is appointed to evaluate requests for prescriptions of unlisted drugs. Because these committees meet usually once a week, most physicians refrain from the red tape of such detailed written documentation. Every Dutch physician swears before obtaining his license that he will practice medicine to the best of his ability and knowledge. Thus he is in continual conflict with his professional and moral conscience.

Dangers to the Physician

The insufficient time available for each patient leads to the treatment of symptoms only, so a truly serious illness is often recognized too late. To earn a living a physician is forced to treat an excessive number of patients on a quantity rather than a quality basis. A fixed sum is paid quarterly for each patient. Each patient obtains the right of unlimited house and office calls. Because most conditions seen are not serious, there is a tendency to see each complaint as a trivial or temporary ailment. Most Dutch physicians, therefore, believe that they are handicapped in the performance of their duties. Attempts by physicians to limit the number of house and office calls by requiring a small fee for each visit (so-called limiting ticket) have failed, because the rights given to the patient by the law could not be compromised.

Warning to the Medical Profession

I am now practicing in the United States, and I feel it my duty to make known this information on socialized medicine. The insidious, step-by-step, intrusion of socialized medicine into our private practice causes less resistance on our part than the abrupt transition such as that which occurred in England. I am convinced that, if the individual American physician becomes aware of these disguised dangers, he will resist the intrusion of socialized medicine by all available means. The unity shown by Dutch physicians, during the German occupation, against the compulsory Nazi physician's organization proves that even a reckless enemy cannot force his will on a united medical profession. Unfortunately the disunity created among Dutch physicians, particularly among their leaders, concerning the introduction of social medical laws after the liberation, has caused a situation from which one can escape only by emigration. I am grateful to be privileged to practice medicine in America today. I trust, it will not be again a case of "too little and too late."

"Un homme averti en vaut deux."

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POSTOPERATIVE SIGN OF SILENT MYOCARDIAL INFARCTION

To the Editor:—The article "Cold Foot—Postoperative Sign of Silent Myocardial Infarction," by Dr. Nathan Frank, in The Journal, July 4, 1959, page 1147, deserves comment. Dr. Frank states: "The purpose of this paper is to describe a syndrome that has not been previously reported." The occurrence of a cold foot postoperatively is not a syndrome, nor is it a sign of anything except possible interference with the circulation to that particular extremity. Dr. Frank mentions the numerous sources of emboli which may cause vascular occlusion in a distal vessel. To these should be added thrombosis in situ and selective vasoconstriction without "organic" cause.

No electrocardiograms were taken preoperatively and no mention is made of serial changes in tracings subsequent to those illustrated. This would be particularly important in case 3, since the tracing illustrated is quite typical of those seen in pulmonary infarction, which the patient soon was proved to have. The tracing in case 2 shows marked T-wave negativity without reciprocity and without Q waves. Such a pattern could be seen in a host of myocardial diseases and extracardiac conditions. Among the latter is severe anemia, which this patient was proved to have a few months prior to surgery (Durham: *Delaware State M. J.* 19:132 [July] 1947). If a recent nontransmural infarction had occurred, a mural thrombus would be unlikely. The electrocardiogram in case 1 does illustrate an anterior wall infarction, but no proof of its recency is offered.

Correlative evidence of acute myocardial infarction by transaminase levels and sedimentation rates is not offered. All the patients are said to have recovered "uneventfully"; yet no mention is made of the fate of the involved leg. Did oscillometric readings and pulses return to the preoperative state? Last, a routine postoperative electrocardiogram in the recovery room is not justified.

Dr. Frank has correctly stressed the importance of watching the legs in the postoperative period and remembering that silent myocardial infarctions do occur at this time, but to associate these occurrences in a new syndrome is unwarranted.

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To the Editor:—I have read the article in The Journal, July 4, 1959, page 1147, by Dr. Nathan Frank, describing the cold foot as a postoperative sign of silent myocardial infarction. This would be an interesting observation if adequately substantiated. However, it is wise to exhibit caution on interpretations of such a positive sign without adequate pathological explanation of its pathogenesis. It would be tragic, indeed, if patients were not given the benefit of embolectomy or other definitive treatment directed at the extremities on the assumption that this could be due in some unexplained way to silent myocardial infarction.

It is difficult to adequately interpret electrocardiograms from small reproductions such as those that accompany this article. However, after close scrutiny, I feel that in case 1 an anteroseptal infarction is certainly apparent, but I do not believe that its age can be determined from this tracing. In case 2 the electrocardiogram appears to show results more consistent with those of myocarditis or pericarditis; I can see no positive evidence of an infarction on this tracing. In case 3, likewise, no good positive evidence of posterior infarction is shown by the electrocardiogram; in fact it is more consistent with an impression of pulmonary infarction. This impression is further substantiated by later clinical and roentgenographic evidence of pulmonary infarction.

I agree that preoperative electrocardiograms are of inestimable importance in evaluating situations of this type, but I do not believe that sufficient evidence has been presented in this paper to permit these observations to be classified as a syndrome.

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To the Editor:—In the July 4 issue of THE JOURNAL appears an article by Dr. Nathan Frank which describes a new sign of silent myocardial infarction, namely, the postoperatively cold foot. Dr. Frank should be commended for his keen clinical observation and his interesting presentation of the cases. However, in studying the tracings presented in his article, I noticed the presence of negative T waves but the complete absence of the corresponding Q waves or S-T segment changes which are necessary in conservative interpretation of acute myocardial infarctions. T-wave changes only were well documented in different clinical conditions, i. e., stress, coronary insufficiency, pericarditis, electrolytic imbalance, severe infections, and even glucose infusion. Since Dr. Frank admits "that the only evidence of myocardial infarction was electrocardiographic," I wonder if any additional electrocardiograms were obtained with further evidence of myocardial infarction.

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REACTIONS TO POISON IVY EXTRACT

To the Editor:—Swarts and Rourke (*J.A.M.A.* 170:1409 [July 18] 1959) maintain that the self-administration of Aqua Ivy tablets for prophylaxis of Rhus dermatitis is hazardous. Four members of one family developed cutaneous reactions after one tablet on three alternate days, and another patient developed purpura and joint swelling after a similar dose.

I dissent strongly from the above-mentioned incrimination of Aqua Ivy as the cause of these reactions. Although I believe that this agent is not very helpful in prophylaxis, I am even more certain that it is essentially harmless. In my experience, Aqua Ivy is a weak antigen. None of my patients has complained of untoward effects when the tablets are used in the prescribed way. Lack of side-reactions is the outstanding quality which separates Aqua Ivy from the more potent Rhus allergens that I have studied experimentally (*A.M.A. Arch. Dermat.* 78:47 [July] 1958). Furthermore, large doses of strong Rhus allergens did not produce joint pains and petechiae. Swarts and Rourke cite my article to document their remark that the use of Rhus extracts may damage the kidneys, but my discussion emphasized the very opposite, that there was no good evidence of kidney damage from the reasonable use of Rhus extracts.

That four members of one family should suddenly develop side-reactions after taking only three tablets when thousands of patients have completed an entire course of 200 tablets without complaint is highly improbable. Did the members acquire an old fashioned case of poison ivy dermatitis after a family picnic? "Guilt by association" is as much a problem in medical science as in politics.

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To the Editor:—Dr. Kligman's skepticism is appreciated. Before reporting these cases careful evaluation of data forced us to conclude that Aqua Ivy, AP, was the offending agent. The reactions were so severe that further administration of Aqua Ivy, AP, for absolute proof, was deemed dangerous. Experience has taught us that any complex chemical given as a drug eventually will produce some reactors. Never, before the over-the-counter distribution of Aqua Ivy, AP, has there been such mass exposure to an antigen. Dr. Kligman states that there was no good evidence of kidney damage from the reasonable use of poison ivy extracts, but in the summary of his fine article (*A.M.A. Arch. Dermat.* 77:149 [Feb.] 1958) he states, "The unusual consequence of Rhus dermatitis includes eosinophilia, kidney damage, etc." If we produce ivy dermatitis by oral administration of poison ivy extract, as took place in one of our patients, then sooner or later, with the widespread use of the antigen, there are going to be unfortunate incidents. These cases did not follow a family picnic. "Old-fashioned poison ivy" shows no joint symptoms and purpura. Connecticut's April is a poor month for family picnics. We believe that it is hazardous to give any antigen to the general population without medical supervision.

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THE LEISURE CORNER

THE PIPE COLLECTOR

The immortal Sherlock Holmes, favorite fictional detective of thousands of doctors, had a characteristic appearance which included a cape, a deerstalker hat, and a smoking, curved pipe. The pipe served Holmes as a silent companion, as it has countless generations of devotees. Its early beginnings make an interesting story.

The pipe was known to Europeans even before the introduction of tobacco. Evidence to this effect has been obtained as a result of many archaeological excavations. For example, the ancient Celts smoked aromatic herbs in iron pipes of their own making, and the early inhabitants of Holland, Ireland, Italy, Germany, and Russia left behind pipes made of iron, terra-cotta, and earthenware. Pipes were used in Europe for smoking medicinal herbs for many years before Europeans learned about smoking tobacco. Pleasure smoking on an increasingly wide scale began with the American Indians who introduced pipes to the white men. The Indians smoked a ceremonial pipe, with a bowl made of red sandstone, called a peace pipe or calumet. The tobacco pipe was introduced to Europe in 1586 by Sir Ralph Lane, commander of a group of colonists in Virginia, who dispatched a pipe to Sir Walter Raleigh. Pipe smoking soon became popular. Under Louis XIV, whose military victories sent French soldiers into adjoining countries where smoking a pipe was an established custom, the fad spread throughout France. In Casanova's memoirs, he speaks of his pipes almost as fondly as he does of his women.

The 17th and 18th centuries brought the vogue of the pipe into popular and general use, and also into casual conversation. History tells us that LaSalle, one of Napoleon's courageous cavalry leaders, always entered battle with a pipe held firmly between his teeth. It is related that he once captured an enemy general who refused to surrender his meerschaum pipe. LaSalle, however, "marched back to camp with the pipe and its owner." Soon thereafter, many of Napoleon's generals created a fad—collecting pipes. Napoleon would refer to these pipe collections as his arsenal of pipes.

The use of the pipe has not always been restricted to the smoking of tobacco. The truth is mankind has always seemed to smoke something. Coltsfoot was once smoked as a sedative for coughs, and asthmatic patients have puffed away at pipes to relieve their attacks. The pipe-smoking custom has extended to the Pacific islands, India, Siberia, Peru, Bolivia, Turkey, and China. Their inhabitants smoke pipes filled with fungus, cocoa, hashish, opium, and a species of hemp, tea, lavender, aniseed, hops, and sunflower seed. Hindus, whose pipe-smoking habits are supposed to be more refined than others, mix all sorts of products in their pipes—sugar, nutmeg, and even ground bananas moistened with rose water.

Pipe-collecting hobbyists invariably number at least one clay pipe in their collection. Pipes with bowls made of clay, porcelain, or the clay-like meerschaum are popular. Porcelain is an excellent conductor of heat and since it is quite fragile, it is more frequently employed as a showpiece than as an actual smoking vehicle. Porcelain lends itself to many beautiful patterns and shapes, and artists, working with ceramics, often enjoy producing pipes that are original creations. Meerschaum, a soft, whitish mineral similar to clay, is often used to make pipes. The material is so light that it will float in water.

Should anyone be interested in devising his own meerschaum pipe, here is a working formula. Meerschaum is a compound of magnesium, silicon, oxygen, and water. Crude magnesium silicate is boiled in milk, then kneeded in wax and linseed oil. Before being treated, the material has a dirty white appearance, but after it is rubbed and polished, it acquires a lily-white hue. The substance is then cut in a block and the bowl shaped. It is then glazed and polished with pumice stone, lime, and tallow. Good workmanship will convert meerschaum into a handsome item, a proud addition to a collection of artistic pipes.

Wood pipes are sought by many collectors, especially the rosewood pipe, which is made of the delicately scented wood of the Brazilian rose tree. Of medium hardness, the color ranges from purplish brown to burnt sienna. The cherrywood pipe is made from wood of the wild cherry, while a Moorish pipe consists of mutton bone and a copper tubing. This pipe has a small bowl and holds but little tobacco. Most pipe racks are never complete without the presence of a brier root pipe. The brier is a shrubby plant of the heath family, and its roots are used for making pipes. The root is thick, close-grained, and hard, and has become the most popular material for making pipes in America and Western Europe. Among the most curious pipes that one can gather for a collection are the hookahs, which are smoked in various parts of the Near East. The bowl of the hookah fits into an airtight vase which is partly filled with water. From the bowl a tube passes downward below the surface of the water. A second flexible tube with a mouthpiece fits into the side of the vase above the water surface. In this way the smoke is cooled and loses much of its "bite."

The pipe-collecting hobby is rooted in generations of pleasure. As one authority on pipes has written, "One would think less of drowning a dog than of throwing a pipe into the dustbin—but then a dog cannot be awakened, but there will always be found men everywhere who will awaken a pipe."

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

The Postmitral Commissurotomy Syndrome: A Four-Year Clinical, Pathologic and Serologic Study, and Its Relation to Restenosis. P. Lisan, A. Reale and W. Likoff. Ann. Int. Med. **50:**1352-1358 (June) 1959 [Lancaster, Pa.].

The authors report on 47 women and 31 men, between the ages of 30 and 50 years, who underwent mitral commissurotomy between January, 1954, and June, 1955. The postmitral commissurotomy syndrome, i. e., a phasic recurrent low-grade fever associated with incisional and/or pleuritic pain, occurred in 21 patients (27%), 18 of whom were women and 3 were men. The first attack occurred within one month after the operation in 7 patients, and as late as 10 months in 4 patients. The syndrome developed within 4 months postoperatively in 17 patients (80%). Multiple attacks occurred in 13 patients. The interval between attacks varied from 1 to 4 months in 6 patients, and the intervals were greater than 4 months in 7 patients. The duration of the attacks varied and did not follow any specific pattern. The pericardial friction rub was the characteristic physical finding. The erythrocyte sedimentation rate was elevated in only 3 patients. A rise in antistreptolysin and antihyaluronidase titers occurred in only one patient. Biopsies of the atrial appendage revealed evidence of chronic rheumatic carditis in 3 of the 27 patients. In none of the patients was that type of Aschoff's nodule seen which Tedeschi and Wagner suggest as pathognomonic of acute or recurrent active rheumatic carditis. Therapy consisted of administration of salicylates, cortisone, hydrocortisone, and antibiotics in conjunction with other usual symptomatic treatment. Restenosis of the mitral valve did not occur in any of the patients with postmitral commissurotomy syndrome.

These observations suggest that the postmitral commissurotomy syndrome is a clinical entity, which is readily distinguishable from the active rheumatic state, and which is characterized by recurrent fever and chest pain after mitral valve surgery. Laboratory and serologic studies and biopsies of the atrial appendage are of little positive value in diagnosis. These studies, however, add more weight to the belief that reactivation of the rheumatic state has no relationship to the postmitral commissurotomy syndrome.

The "Silent Coronary": The Frequency and Clinical Characteristics of Unrecognized Myocardial Infarction in the Framingham Study. J. Stokes and T. R. Dawber. Ann. Int. Med. **50:**1359-1369 (June) 1959 [Lancaster, Pa.].

Within the frame of an epidemiologic study of the cardiovascular diseases set up by the U. S. Public Health Service in Framingham, Mass., the authors studied the clinical manifestations of 65 men and 8 women, between the ages of 30 and 59 years, with myocardial infarction, with special reference to thoracic discomfort. Of these 73 patients, the myocardial infarction was clinically unrecognized in 15; 8 of the 15 denied any precordial pain whatsoever. Careful analysis of the data obtained from the 15 patients with unrecognized infarction and of those obtained from the 58 patients with recognized infarction failed to show any significant differences between the 2 groups regarding age, sex, occupation, weight, or blood pressure. Both groups had consulted physicians with about equal frequency for reasons other than coronary disease during the period in which the infarcts occurred. There was, however, a difference in the prevalence of anginal pain after myocardial infarction in the 2 groups. Although no characteristic clinical pattern of "silent" myocardial infarction was determined, anginal pain was significantly less frequent after unrecognized infarction, and there were also some differences in the electrocardiographic position of the myocardial infarction in the 2 groups. Of the 10 anterolateral myocardial infarctions, only 1 was clinically unrecognized; 8 (53%) of the 15 clinically unrecognized infarcts were posterior in position, and 6 (40%) were anteroseptal.

The fact that unrecognized infarction was less frequently followed by anginal pain than were recognized infarcts supports the suggestion that the pathogenesis of pain associated with angina pectoris is qualitatively similar to that of infarction, and differs only in degree. It would also appear that the "silent coronary" most often resulted from infarction of the anterior left ventricular wall and

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The place of publication of the periodicals appears in brackets preceding each abstract.

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septum, or the posterior wall, but the numbers are small, and additional data will have to be obtained to confirm this finding. This study emphasizes the importance of laboratory studies in the differential diagnosis of precordial discomfort.

Trigger Mechanisms in Asthma. R. H. Overholt. Dis. Chest 35:587-596 (June) 1959 [Chicago].

Irreversible structural changes in the bronchial system of patients with asthma may act as "trigger mechanisms." The author relates some experiences in the search for, and in the treatment of, structural abnormalities which act as "trigger mechanisms." In the past, the attention of most surgeons centered on interventions which interrupted the nerve pathways to the lung; structural abnormalities were not searched for and corrected, although overlooked "triggers" possibly contributed to the disappointing results. Patients with intractable asthma should have the benefit of a thorough investigation, particularly (1) those whose illness was initiated by an attack of pneumonia, (2) those who have frequent colds in the chest, (3) those who have productive cough, (4) those who have a unilateral wheeze, (5) those who have chest discomfort or pain, and (6) those in whom there is systemic evidence of a focal infection, such as arthritis.

Routine chest films may reveal nothing in patients with asthma, and visualization with contrast mediums is necessary if the presence, nature, and extent of a structural abnormality in the bronchial system are to be determined. Since asthma has been considered by many to contraindicate bronchography, the author shows how the risk can be minimized. Bronchography is deferred until maximum improvement of bronchospasm has been effected. Discussing the interpretation of the bronchographic findings, the author says that structural abnormality is clearly indicated if saccular or tubular dilatation, incomplete stenosis, distortion, crowding, or abnormal spread of branches is found. Complete lack of filling of a segment means one or 4 things: *(a)* technical failure; *(b)* localized bronchospasm; *(c)* mucous plug; or *(d)* structural abnormality.

Surgical exploration permits direct inspection of the lung and testing of segments as to inflow and egress of air. Mechanical defects can be corrected forthwith, and sympathetic, parasympathetic, or both denervations carried out simultaneously. The author explains the value of surgical exploration and the elimination of "trigger mechanisms" in the histories of 3 illustrative cases. The first case report shows the severity and disabling nature of the disease for which bilateral surgery was required. In the second case, the "trigger" was abolished without sacrificing any pulmonary tissue. In the third, an unsuspected "trigger" was discovered at exploration and easily corrected.

Evaluation of So-Called Pleural Indurations. E. Frenk. Schweiz. med. Wchnschr. 89:505-509 (May 9) 1959 (In German) [Basel, Switzerland].

The author briefly discusses the importance of the correct etiological identification of acute pleural effusions. It has been established that tuberculosis accounts for only a minor portion of these effusions, many being caused by neoplasms or pneumonia, and some by pulmonary infarcts, leukemia, uremia, pulmonary abscesses, and abdominal diseases; and in some cases the origin remains unexplained. If a pleural effusion persists for a time, pleural induration or thickening results from the organization of the fibrin deposits on the pleura. The differentiation of the etiology is especially important in the case of tumors in the pleural space and of pathological processes in the pulmonary parenchyma. The author demonstrates this on the basis of the histories of 3 patients, one of whom had a mesothelioma, one a fibrosarcoma, and one a residual empyema in the thickened pleural cupula, in the presence of an old tuberculous process.

Since residual effusions with pleural thickening may become reactivated even after decades of quiescence, and then generally produce atypical disease, it is essential that every patient with pleural induration be subjected regularly to follow-up examinations. Reactivation is demonstrated on the basis of case histories. These illustrate, among others, subacute reactivation of a tuberculous residual empyema that had caused pleural thickening or acute reactivation of residual tuberculous empyemas by mixed infection, trauma, or tumor; finally, as the result of increasing shrinkage and calcification, a pleural induration can cause rapidly progressing circulatory disturbances—in one case precordial venous stasis.

The Isolation and Characterization of a Purified House Dust Allergen Fraction. W. E. Vannier and D. H. Campbell. J. Allergy 30:198-218 (May-June) 1959 [St. Louis].

For many years aqueous extracts of house dust have been used for diagnostic tests and hyposensitization. The authors cite studies carried out by others on the chemical properties of the skin-reacting materials in house dust. They themselves have fractioned aqueous extracts of house dust and mattress dust with ammonium sulfate and a variety of organic solvents. In general, most of the fractions were of a similar order of activity by direct skin test. The least soluble materials had the higher nitrogen content (2 to 5%), while the more soluble fractions had lower nitrogen contents (0.3 to 2%). The authors describe the isolation and characterization of an active dust allergen fraction, low in both nitrogen and color and consisting predominantly of a heterogeneous mixture of acidic polysaccharides.

Some persons who reacted to commercial preparations did not react to the purified material prepared by the authors. This could be due to the particular relationship, in the various preparations, between the concentrations of materials of the same allergen specificity and the patient's threshold of skin reactivity. Another more likely explanation is that more than one allergen specificity is involved and that there are materials with allergen specificities in the less purified commercial preparations that are not present in the purified material. It is reasonable that clinical house dust allergy may be associated with a number of different allergen specificities. It is also possible, however, that some of the reactions obtained to the less purified fractions are due to the presence of other known allergens (for example, animal danders or pollens in the original house dust). The type of dust used to prepare the extracts may also be a factor. The material with which the authors started their studies contained large amounts of mattress dust which may be deficient in some of the allergen specificities normally found in house dust.

The dust fraction was found to be heterogeneous by electrophoretic and sedimentation analysis. Two main peaks were demonstrated by electrophoresis. The chemical composition was found to be roughly 5% polypeptide and 95% polysaccharide, with about equal amounts of uronic acid (probably glucuronic acid), D-glucose, D-galactose, and D-mannose as well as lesser amounts of L-rhamnose and L-arabinose. Even though the problem of the chemical nature of the specific house dust allergen has not been solved, these studies revealed new information about the nature of materials that have been used clinically for the past 30 years.

Peripheral Neuropathy in Myxedema. L. E. Crevasse and R. B. Logue. Ann. Int. Med. 50:1433-1437 (June) 1959 [Lancaster, Pa.].

Of 65 patients with spontaneous myxedema reported on by the authors, 31 (47%) had peripheral neuropathy manifested by severe lancinating pains in the extremities and/or paresthesias. It was the presenting and dominant complaint in 2 women, aged 39 and 58 years, respectively, and in a 66-year-old man. The neuropathy may be the initial manifestation preceding the more overt symptoms of myxedema. Because of anemia, pallor, and neuropathy, myxedema is frequently confused with pernicious anemia. The motor and sensory symptoms are out of proportion to neurological findings, and may be confused with a primary degenerative disease of the central nervous system, nerve root compression, or hysteria. The neuropathy is completely reversible, regardless of the duration of the illness, and will resolve on adequate thyroid replacement therapy alone.

Gastrointestinal Protein Loss in Idiopathic-Hypercatabolic Hypoproteinemia. M. Schwartz and S. Jarnum. Ugesk. læger 121:689-696 (April 30) 1959 (In Danish) [Copenhagen].

In 4 patients with so-called idiopathic or essential hypoproteinemia of long duration, there was high albumin degradation (hypercatabolism), and by means of radioactive polyvinylpyrrolidone an abnormally high permeability to molecular substances in the gastrointestinal canal could be established in all the cases. The hypoproteinemia was due to a loss of protein in the lumen of the digestive canal and was thus a symptom of disease there (hypertrophic gastritis, disease of the small intestine).

Hypoglycemic Effects of Phenethyldiguanide (DBI): Clinical Study of Juvenile and Brittle Diabetes. A. Amador and R. Rodríguez. Rev. invest. clín. 11:11-33 (Jan.-March) 1959 (In Spanish) [Mexico, D. F.].

This report on the hypoglycemic effects of phenethyldiguanide (DBI) comprises 3 studies made at the diabetes clinic of the Hospital for Nutritional Diseases in Mexico City. The first study consisted of a glucose-tolerance test given to 4 diabetic patients and to a control group of 4 normal subjects. After determination of fasting glycemia, 100 mg. of glucose was administered orally to all the subjects; then postprandial glycemia was determined every hour for 5 hours. The test was repeated a week later, this time with administration of DBI in doses that varied from 100 to 250 mg. Phenethyldiguanide did not modify the glucose tolerance in the normal subjects, but produced slow and moderate glycemic decrease in the diabetic patients.

The second study was made with 2 hospitalized patients with uncomplicated diabetes, one requiring 20 units of insulin, and the other 40 units. These patients received a daily dose of 150 mg. of DBI during 2 weeks. Fasting and postprandial glycemia was determined, and glycosuria was checked during the whole treatment. Laboratory blood, urine, and liver-function tests were performed. After a 2-week interval the same treatment was repeated. The over-all results indicated definite effects of DBI on postprandial glycemia.

The third study consisted of prolonged administration of DBI to 12 outpatients with uncomplicated diabetes. Five were juveniles requiring high doses of insulin and suffering from so-called brittle diabetes. The other 7 were adults with varied insulin requirements. Laboratory blood, urine, and liver-function tests were also performed. The administration of DBI was started only after stabilization of the diabetes with a uniform dose of insulin, which required from 1 to 3 months according to the individual conditions. The initial dose of DBI was 150 mg. daily. The maximal dose was 250 mg., which was reduced to 200 mg. when symptoms of intoxication appeared. In both the juvenile and the adult groups there was decrease in glycemia, and the dose of insulin could be gradually reduced according to the degree of glycosuria, glycemia, and the clinical symptoms. The result of the treatment was satisfactory in 10 of the 12 patients, which is significant since none of the patients had moderate diabetes, and 8 had an insulin requirement of 40 to 100 units at the start of treatment. Toxic manifestations from DBI were only of a digestive character (nausea, vomiting, occasional diarrhea) and were controlled by administration of pancreatic extract. The authors attribute the significant effects of DBI on brittle and juvenile diabetes to enzymatic blocking of the action of glucagon and epinephrine, inhibition of glyconeogenesis beginning with the amino acids, and increase of anaerobic glycolysis.

Plasma Prothrombin in Liver Disease: Its Clinical and Prognostic Significance. G. Mindrum and H. I. Glueck. Ann. Int. Med. 50:1370-1384 (June) 1959 [Lancaster, Pa.].

The well-known clinical observation that a low concentration of plasma prothrombin, which does not respond to the administration of vitamin K, indicates serious liver disease prompted the authors to determine the plasma protein level in 82 patients with primary liver disease. A synthetic substrate, *p*-toluenesulfonyl-l-arginine methyl ester (TAMe), was used to determine the plasma prothrombin concentration. As controls, 24 patients with severe systemic disorders, including infection and neoplastic, metabolic, degenerative, and collagen diseases, were studied. The TAMe assay of the plasma prothrombin level differs from the one-stage methods in that it measures prothrombin and its product thrombin in terms of thrombin yield rather than clotting times. Previous studies had shown that the TAMe assay was unaffected by deficiencies of blood clotting factor VII, fibrinogen, and factor V, which affect one-stage methods of determining plasma prothrombin levels to a considerable degree.

Results showed that the TAMe assay of prothrombin correlated well with the clinical status of the patient with liver disease. Extremely low levels were found in patients with fatal cirrhosis of the liver and in patients with fatal massive necrosis of the liver. Patients with severe cirrhosis of the liver had persistently low values for months or years, whereas patients with viral hepatitis showed higher values and more rapid changes. Patients with serious or fatal liver disease showed little or no improvement in the prothrombin assay after the administration of vitamin K_1 emulsion, in contrast to those with viral hepatitis who showed prompt improvement. The true prothrombin levels invariably lagged behind more rapidly recovering accessory factors.

Comparison of the results of the TAMe assay with those of standard liver function tests showed that a good correlation exists between the findings on the TAMe assay and the albumin-globulin ratio test, and an excellent statistical relationship was observed between the TAMe assay and the Bromsulphalein retention. The TAMe assay of the plasma prothrombin level may be employed in patients with acute or chronic liver disease, and it is not influenced by the degree of jaundice. Since the assay measures a specific product of the liver, it serves as a useful liver-function test. Serial assays yield excellent prognostic information.

The Course of Sarcoidosis and Its Modification by Treatment. D. G. James and A. D. Thomson. Lancet 1:1057-1061 (May 23) 1959 [London].

The authors compared in 200 patients with generalized sarcoidosis, which had been confirmed by histological evidence of sarcoid tissue, the results of antituberculous and corticosteroid therapy with the outcome in untreated patients. The response to treatment was assessed by the clinical, roentgenologic, and microscopic findings before, during, and after treatment. The clinical manifestations of sarcoidosis in the untreated patients either showed a high incidence of spontaneous remission or persisted unchanged. No significant improvement could be attributed to antituberculous therapy. There was an early clinical improvement with corticosteroids, and this was more dramatic if the lesions were acute or transient rather than chronic or persistent. Thirty-seven of 47 patients with bilateral hilar lymphadenopathy and 19 of 36 patients with pulmonary mottling eventually showed clear chest roentgenograms without treatment. The roentgenographic improvement was better in the untreated patients than in those receiving antituberculous or corticosteroid drugs. This was possibly due to the delay in beginning treatment. Spontaneous resolution of the abnormalities in the chest roentgenogram was less likely if there was concomitant cutaneous or ocular sarcoidosis. Although this held for the untreated patients and those receiving antituberculous drugs, it was not evident in the patients treated with steroids in whom the incidence of roentgenographic clearing was similar in the presence or the absence of extrathoracic sarcoidosis. Roentgenographic evidence of bone cysts remained unchanged in untreated and treated patients.

Microscopic evidence of sarcoid tissue persisted in most of the untreated patients or those receiving antituberculous drugs but was profoundly modified toward a nonspecific inflammatory reaction in most patients receiving steroids. Reactions to the Kveim test reflected the activity of the disease in untreated patients; due to cellular modification, the reaction to the Kveim test may be suppressed clinically, and the tissue findings may be obscured by corticosteroid therapy; the patients' reactions to the Kveim test were not influenced by antituberculous drugs. The differences in behavior and course of subacute (or transient) and chronic (or persistent) sarcoidosis are stressed, since they influence the evaluation of any regimen of treatment. Triamcinolone is the current steroid preparation of choice. It is principally given in subacute sarcoidosis to prevent progression to a stage of chronic irreversible fibrosis, and it is given in the chronic disease for symptomatic relief. There is no indication for administration of the potentially toxic antituberculous drugs, either as a prophylactic or as a therapeutic measure, in sarcoidosis.

Primary Amyloidosis: Hematological Aspects. J. Jamra, R. M. B. C. Laurenti, T. Verrastro, T. de Brito and others. Rev. Hosp. clín. 14:76-82 (March-April) 1959 (In Portuguese) [São Paulo, Brazil].

Two patients suffering from primary amyloidosis, a much rarer disease than the secondary form, were treated at the Hospital das Clínicas, University of São Paulo. In both cases the amyloidosis was complicated by hematological disorders. In one patient the complication was thrombocytopenic purpura, an association that has not been mentioned before in the medical literature. In the other patient the complication was hemolytic anemia. In neither case was a definite favorable response to hormonal therapy and/or splenectomy obtained.

In the first patient, a 44-year-old woman, the onset of the disease had been marked by weakness of 4-month duration followed 2 months later by cutaneous hemorrhages. One month before being admitted to the hospital, she had had a prolonged menstrual period which led her to seek medical advice. After the diagnosis of thrombocytopenic purpura was established, the patient received 0.9 cc. of epinephrine daily for 10 days. During this period there was improvement of the cutaneous hemorrhages, but the hematological condition remained unchanged. Corticotropin (ACTH) was then administered in daily doses of 40 units during another 10 days, followed by the administration of prednisone (150 mg. daily) for 7 days. Melena occurred on the second day of prednisone therapy. The medication was suspended, but 4 days later the patient suffered a cerebral accident diagnosed as ischemia caused by hemorrhage or anoxia. An emergency splenectomy was performed; the following day hematemesis and fall of blood pressure occurred, and the patient died.

The second patient, a 45-year-old man, had had a diagnosis of hemolytic anemia 2 years before admission to the hospital. He had been treated with prednisone, nitrogen mustard, and blood transfusion and had undergone splenectomy. A new treatment was given with prednisone in daily doses of 150 mg. The patient was discharged after 40 days, during which he had gained weight and his condition had improved. This remission lasted for approximately 4 months. The patient was rehospitalized following the return of intestinal and cardiac symptoms and died 24 days later. The authors believe that amyloidosis was, in these 2 cases, the primary condition and the causal factor of the hematological disorders, and they advise that primary amyloidosis should always be investigated as a possible cause in erythrocyte and platelet alterations.

Progressive Chronic Polyarthritis Treated with Prednisone: Development of Peripheral Neuropathy and Periarteritis Nodosa, and Death: Case Report. J. Rotés-Querol, J. Surós and E. Lience. Med. clín. 32:113-116 (Feb.) 1959 (In Spanish) [Barcelona, Spain].

The development of periarteritis nodosa in patients with polyarthritis has become much more frequent since the introduction and wide use of adrenal steroid therapy. In the case reported, the association of polyarthritis with periarteritis nodosa was further complicated by the development of polyneuritis, which, as a rule, is not present in the clinical picture of chronic polyarthritis. The patient, a 65-year-old man, first experienced pain in his right shoulder and arm, which after a period of remission extended to his lower extremities. He was first seen by the authors 11 months after the onset of his disease; he had already received about 6 Gm. of prednisone and 1.75 Gm. of prednisolone. His condition was poor, cachectic. The dose of prednisone he had been receiving (20 mg. daily) was gradually reduced, and both analgesic and tonic preparations were given with favorable results. The remission lasted for approximately one month. Edema of the lower extremities, dysesthesia, and eventually paresis occurred in succession. The prednisone medication was suspended after an episode of melena and hematemesis. As the articular symptoms recurred, the administration of prednisone was resumed at a small dose (6 mg. daily). A neurovascular syndrome developed, including peripheral sensory and motor polyneuropathy, trophic cutaneous ulcers, circulation occlusion, and gangrene in the lower extremities. The patient died 16 months after the onset of his disease.

The authors consider the development of periarteritis nodosa and its complicating peripheral neuropathy as additional, separate diseases in this patient and believe that the effects of prednisone played a part in producing the complex clinical picture. They relate the toxic effects of adrenocortical preparations to an excess of mineralocorticoids over the glucocorticoids, which becomes manifest during the period of adrenocortical inhibition that follows the suppression of hormonal therapy. It is during this period that periarteritis nodosa usually develops, sometimes associated with peripheral polyneuritis as in the case reported.

Porphyria in Sweden and South Africa. G. Dean and H. D. Barnes. South African M. J. 33:246-253 (March 21) 1959 [Cape Town].

The porphyrias have been classified into acute porphyria, chronic porphyria, and congenital porphyria. This last form was later renamed "erythropoietic porphyria," because in this type the presence of numerous fluorescent normoblasts in bone-marrow films indicated that the marrow was the site of the metabolic anomaly. Other forms were grouped as hepatic porphyria, because excessive amounts of porphyrins or a precursor could be demonstrated in liver tissue. Discussing the inheritance of porphyria, the authors mention Waldenström's studies; this investigator finally deduced that acute porphyria in Sweden was based on non-sex-linked inheritance of a Mendelian dominant type. The studies of Dean and Barnes disclosed a similar inheritance for susceptibility to porphyria among the white population of South Africa and traced the inheritance to a pair of early settlers from Holland. In these cases, however, symptomatology was mixed; acute attacks occurred more frequently in women; cutaneous lesions were commoner and more severe in men; and some cases showed both acute and cutaneous symptoms. This supports Watson's contention that subgroups of hepatic porphyria are varied manifestations of the same underlying anomaly, but the findings in Sweden, where acute and cutaneous manifestations of porphyria do not overlap, are not in agreement with this hypothesis.

A comparative study of Swedish and South African cases was indicated, and to this end Dean visited Sweden, where arrangements were made by Waldenström for him to see a number of patients, including a family in which several members had suffered attacks of acute porphyria. Specimens of urine and feces from these patients and some of their relations were screened for porphyrin metabolites by Dean; quantitative determinations of urinary porphobilinogen and delta-amino-laevulic acid were carried out in Malmö; and the stools were sent to Johannesburg for quantitative porphyrin analysis. Similar studies were carried out on 2 families in Holland.

The results of these studies indicate that intermittent acute porphyria is a different genetic disorder from the condition which presents with acute episodes or cutaneous lesions and sometimes with both. The name "variegate porphyria (porphyria variegata)" is proposed for the latter. The main features whereby these 2 forms can be differentiated are as follows: 1. Cutaneous manifestations, which are common in variegate porphyria, are never seen in members of families with the intermittent acute form. 2. In the latter, excretion of porphobilinogen and delta-amino-laevulic acid continues at a high level, sometimes for years, after the attack has subsided, but in variegate porphyria it returns to normal, or virtually normal, levels as the patient recovers. 3. Raised stool coproporphyrin and protoporphyrin are characteristic of variegate porphyria even during remission from acute episodes, and of latent cases without clinical manifestations. In intermittent acute porphyria, stool porphyrins may be slightly raised during the acute attack but are otherwise normal or nearly so.

The Excretion of Porphyrins and Porphyrin Precursors by Bantu Cases of Porphyria. H. D. Barnes. South African M. J. 33:274-278 (March 28) 1959 [Cape Town].

It has been shown that Swedish patients with intermittent acute porphyria and white South African patients with variegate porphyria, who may present either cutaneous manifestations or acute symptoms, and not infrequently both, differ markedly from each other in their patterns of excretion of porphyrins and porphyrin precursors. Hundreds of cases of porphyria have been seen among the Bantu of South Africa in recent years, and the pattern of excretion in some of these has been determined for comparison with those of the 2 groups mentioned above. The excretion of porphyrins and porphyrin precursors by 15 adult Bantu patients with a cutaneous type of porphyria is reported and shown to differ from findings in patients with intermittent acute and variegate forms of porphyria.

In commenting on the implications of his observations in relation to the etiology and classification of porphyria among Bantu patients, the author points out that there is no conclusive indication of a hereditary factor in the etiology of porphyria among the Bantu patients; this is a marked contrast to the evidence of a Mendelian dominant inheritance for susceptibility to acute intermittent porphyria among the Swedish and to variegate porphyria among the white South African groups. While this gap may be filled in the future, it is also possible that porphyria may be an acquired disease in the Bantu. It has been suggested that a liver, weakened by infantile malnutrition, which is common among the Bantu, breaks down under stress in adult life and that porphyria is one of its manifestations. As regards classification, the author believes that the present status of knowledge points to the necessity of distinguishing 2 groups of cutaneous porphyria in addition to the erythropoietic (congenital) form. In this connection he cites Tio, who culled many cases from the literature and pointed out that the mixed cases (with cutaneous and acute features) tended to commence earlier in adult life, the patients giving family histories more frequently than those with purely cutaneous disease which began later in life and was more often solitary. The latter Tio designated as "porphyria cutanea tarda SS (sensu strictiori)." Waldenström recently proposed hereditary and symptomatic subgroups of porphyria cutanea tarda. Mixed porphyria, in Watson's sense, has not been encountered among Bantu patients; very few have presented with acute manifestations, and none of them has had conspicuous skin lesions.

It is noteworthy that the Bantu porphyria patients, who on metabolic findings seem to lie between the Swedish and the white South African patients, on the basis of clinical manifestations would be placed at the opposite extreme to the Swedish, with the white South African group intermediate. This leads to the inference that Watson's hypothesis that the clinical findings in hepatic porphyria are varied manifestations of a single underlying metabolic anomaly, though true of the white South African patients, cannot be extended to cover all 3 groups. It has been observed that skin sensitivity to solar radiation in humans and to ultraviolet light in albino rats is enhanced after administration of delta-amino-laevulic acid. Cutaneous reactions in the patients under discussion cannot be harmonized with this finding, since the Swedish patients, who would presumably have the highest concentrations of this metabolite in the circulating blood, have no skin lesions, such as are present in many patients in the other 2 groups.

Whipple's Disease: A Clinico-Pathological Study of Three Cases. L. I. Taft, A. G. Liddelow and Mary Ralston. Australasian Ann. Med. 8:129-136 (May) 1959 [Sydney, Australia].

To the approximately 60 cases of Whipple's disease previously reported in the literature, and sometimes referred to as intestinal lipodystrophy, the authors add 3 new cases, all of which concerned men, ranging in age from 44 to 60 years. The clinical course and the autopsy findings in these patients are presented. The authors discuss some of the numerous etiological theories on the condition, pointing out that the theory of an intestinal defect in the handling of fat as the basic abnormality is difficult to accept.

The authors consider the basic abnormality to be a proliferation of mucoprotein-producing reticuloendothelial cells; these cell are maximally concentrated in the small intestinal lymphatic system, but they also occur at other sites, including the peripheral lymph nodes where, in the earliest stages, they can be seen arising in the germ centers. Transitions demonstrable between ribonucleic acid (RNA)-containing cells and cells containing mucoprotein are considered to indicate synthesis of the mucoprotein, rather than its phagocytosis by the proliferating reticuloendothelial cells. Collagenization of lymph nodes and lymphatics is believed to be a result of the activity of these cells and responsible for the observed obstructive phenomena. The stimulus responsible for the proliferation of the mucoprotein-synthesizing cells is unknown. It may represent a highly differentiated neoplastic process. Again, it may be the outcome of some cellular defect—e. g., enzymatic—whereby there is an abnormal accumulation of a normally synthesized mucoprotein. Response to steroid therapy in this condition is compatible with the known reticuloendothelial suppressive action of adrenal cortical steroids. However, this response is not sustained.

Hypertension—Treated and Untreated: A Study of 400 Cases. A. W. D. Leishman. Brit. M. J. 1:1361-1368 (May 30) 1959 [London].

The author compared the course of untreated hypertension in 87 men and 124 women, who had a diastolic pressure initially not less than 100 mm. Hg. with that of hypertension in 73 patients treated by lumbodorsal sympathectomy and in 118 patients treated with ganglion-blocking drugs. The patients were followed up regularly after 1946. Of the 211 untreated patients, 106 have died, and study of their cases confirmed that high diastolic pressure, male sex, and presence of albuminuria or retinopathy were particularly unfavorable features. Changes in the electrocardiogram did not appear to influence the prognosis. Rise of blood pressure in the untreated patients was uncommon, but in 20 of 176 patients (128 of whom survived for more than 5 years and 48 failed to survive 5 years but were reexamined before death), the diastolic pressure increased by more than 20 mm. Hg. Malignant or accelerated hypertension developed in 7 of these 20 patients. This could not have been foreseen when they were originally examined. A satisfactory lowering of blood pressure was achieved in 65 of the 73 patients who underwent lumbodorsal sympathectomy. The unusual permanence of these results was attributed to extensive dorsal denervation. Ganglion-blocking agents were given parenterally; of the 118 patients treated, 25 have since died, and 7 have been treated for less than a year; of the remaining 86 patients, 58 (67%) are now regarded as well controlled, 23 are under fair control, and 5 are therapeutic failures. An adequate hypotensive response was achieved in only 6 of the 25 patients who died.

The treated and untreated groups of patients are judged to have had hypertension of equivalent severity, and comparison of their respective mortality rates has been made in 8 separate categories of hypertension. Except among those with malignant hypertension, the mortality rate among treated patients was in no instance appreciably higher than one-third that among the untreated patients. Although the length of observation of patients treated by drugs is not yet adequate for strict comparison, the statistics leave no doubt that lives have been extended by both the surgical and the hypotensive drug treatment. Reduction in the number of fatal strokes has been a notable feature. Judged from the fate of untreated patients, the employment of ganglion-blocking drugs seems justified in any male patient whose diastolic pressure is consistently above 120 mm. Hg and in the presence of albuminuria may be advisable when the blood pressure is below this level. Female patients with hypertension, however, do not normally require this treatment unless the diastolic pressure is at least 130 mm. Hg.

SURGERY

Pulmonary Resection for Drug-Resistant Cavitary Tuberculosis Utilizing Ancillary Drugs. W. R. Webb. Am. Rev. Tuberc. 79:780-789 (June) 1959 [New York].

Sixty-eight pulmonary resections were performed on 62 patients with persistent cavitary tuberculosis, who ranged in age from 18 to 65 years. All the patients had tubercle bacilli in the sputum of proved or presumptive resistance to streptomycin, isoniazid, and PAS. The duration of total illness ranged up to 17 years, and only 20 of the patients had had tuberculosis for less than 3 years. The patients were previously subjected to operations which included pneumoperitoneum, pneumothorax, and thoracoplasty. Roentgenograms made at the time of admission showed that 41 patients had far-advanced and 21 had moderately advanced tuberculosis. Each patient was given viomycin and pyrazinamide for 2 weeks before the operation and for approximately 3 months after the operation. Six of the patients included in an initial report received thiazolsulfone, which was not used after the more potent pyrazinamide became available. The usual dosage administered consisted of 2 Gm. of viomycin twice a week, with either 1 Gm. of the sulfone 4 times daily or 500 mg. of pyrazinamide 4 times daily. The administration of streptomycin, isoniazid, and PAS was continued in the belief that many of the bacilli in the areas outside the cavity might be susceptible to their action.

The resections in this series included 16 pneumonectomies, 24 lobectomies, 8 lobectomies plus segmental procedures, and 20 segmental resections. These operations presented marked technical difficulties, as dense adhesions, hilar fibrosis, and multiple enlarged adherent lymph nodes were common findings. Significant hemorrhage, due to injury to the vascular structures, occurred in 4 patients, but it was possible to control the hemorrhage and complete the contemplated operation in every patient. Five of the 62 patients died. All deaths occurred early, but none was directly related to the tuberculous disease or to the fact that the infections were resistant to the major antituberculous drugs. The patients have been followed up for from 4 to 56 months. Fourteen patients have shown subsequent tuberculous relapses, such as 2 roentgenologic relapses, 5 bacteriological relapses, and 7 relapses of both types. All but 5 of the patients now have inactive tuberculosis following further drug or surgical therapy.

The author has not noted undue complications after segmental resections, which actually have resulted in far better results than either the lobectomies or the pneumonectomies. The administration of viomycin combined with pyrazinamide appears to be of value as temporary protection for excisional therapy of tuberculous lesions in which the bacilli are resistant to the major antituberculous drugs.

Management of Chylous Extravasation. W. J. Burdette. A. M. A. Arch. Surg. 78:815-831 (June) 1959 [Chicago].

The author presents 3 patients with chylous extravasation observed in the hospitals affiliated with the University of Utah College of Medicine. The first was a 26-year-old man; the second, an infant; and the third, a 2-year-old boy. The first patient has resumed his occupation after the operation. The infant slowly improved on a regimen of repeated paracentesis, transfusions, and administration of albumin. The third patient died, and autopsy revealed chylous effusion into the pleural and pericardial cavities.

The author discusses the etiology, symptoms, diagnosis, and treatment of chylous extravasation on the basis of an extensive literature, a total of 172 references being listed at the end of the paper. The etiology of chylous extravasation may be due to trauma, either surgical or nonsurgical, or to obstruction resulting from neoplasm, infection, thrombosis, and cirrhosis, or it may be idiopathic. Chylous extravasation should be considered as disease of the thoracic duct, but with regard to the symptomatology it can be classified into groups with regard to type and to the time of onset of symptoms. Early in the disease, the appearance of chyle in the abdominal cavity may occur in 2 principal ways. In the first there is painless, cumulative ascites, and most of the symptoms are due to the presence of a large amount of fluid in the abdominal cavity. This type occurs commonly in infants and children, and, because of the patency of the tunica vaginalis, chylocele may be the first thing noted. In adults, chyle may also dissect downward and present in the groin. The chyle may leak in quantities as high as 2 liters per day. The other type of case is that in which the patient's presenting symptoms are those characteristic of the acute abdomen. It is frequently confused with appendicitis, and cases have also been reported in which celiotomy was performed with a preoperative diagnosis of cholecystitis, mesenteric embolism, or perforated viscus. When the thoracic duct has been damaged, there may at first be no symptoms, because time is required for the chyle to break through the pleura or peritoneum into the thoracic or abdominal cavity. When this occurs in the chest, it may be accompanied by dyspnea and a shock-like state, which is relieved by removing the fluid Injury to the duct in the neck may result in a fistula.

The diagnosis of chylous extravasation is usually made by examination of fluid withdrawn from the peritoneal and thoracic cavities or obtained from a cervical fistula or collection. Confirmation is obtained on microscopic examination when material is stained with lipophilic stain. The management of chylous extravasation is most effective if the following principles are observed: 1. The condition is regarded as one involving a single system, the clinical manifestations depending on the locus affected. 2. Conservative management by withdrawal of chyle is limited unless improvement occurs promptly. 3. Surgery is performed early and consists of ligation or excision of the affected portion of the system. 4. Visualization of the ductal system is carried out through the use of lipophilic dyes or angiograms when a question of adequate collateral drainage arises. 5. Supportive treatment is adequate to repair the fluid and nutritional deficit resulting from the leakage of chyle. 6 The surgeon is vigilant both to avoid operative injury to the thoracic duct and to recognize and repair it at the time it occurs.

Resection in the Treatment of Pulmonary Tuberculosis: Statistical Report on 304 Cases. G. D. Bianchera, G. Bozzetti and G Ferrara. Ann. med. Sondalo 7:18-32 (Jan.-Feb.) 1959 (In Italian) [Sondrio, Italy].

The authors report on a statistical study on 304 male patients, 19 to 50 years of age, with pulmonary tuberculosis, who were subjected to lung resection during the period from December, 1951, to April, 1957. Most of the patients had suffered from a chronic form of pulmonary tuberculosis for many years and had received antibiotic treatment and medical or surgical collapse therapy. Only 10% of the patients presented a form of the disease requiring resection. Complete data were available on only 258 of the 304 patients treated, but none of the remaining 46 patients had died at the time the study was made. At operation tuberculosis had been present for more than 2 years in 69.4% of the patients and for from 4 to 8 years in 32%. Segmental resection was performed in 7.8% of the cases, lobectomy in 55%, more extensive resections, including multiple segmental lobectomies, in 9.3%, and pneumonectomy and pleuropneumonectomy in 27.9%. Thirty patients (9.8%) died, 11 (3.6%) of them within 60 days after the operation, and 19 (6.2%) after a period of from 1 to 7 years.

Results classified as "good" were obtained in 183 (71%) of the patients who were followed up. These patients, who returned to normal life, did not suffer any surgical complications or relapses of tuberculosis, and their sputum was negative. Results classified as "incomplete" were obtained in the remaining patients; complications, such as bronchial fistula, empyema, and cor pulmonale, or a relapse of tuberculosis in the residual homolateral or contralateral parenchyma persisted or reappeared.

The patients were divided into 3 groups, according to the previous treatment received and the form of the disease. The first group was composed of 22 patients (8.5%) with unilateral or circumscribed lesions, who before surgery had received only medical treatment, had responded to treatment with antibiotics, and were in a period of stabilization of the disease. The second group was composed of 130 patients (50.4%) in not too severe condition with unilateral lesions not more than 2 cm. in diameter, who had received medical or surgical collapse therapy, and who had had the disease for 4 years. The third group was composed of 106 patients (41.1%) in very poor condition, in whom resection was performed as an emergency operation. Good results were obtained in all 22 patients of the first group, in 98 (75.3%) of the second group, and in 63 (59.4%) of the third group. Results were incomplete in 20 patients (15.3%) of the second group and in 25 (23.6%) of the third group. Twelve (9.3%) of the patients who died belonged to the second group, and 18 (16.9%) to the third group. Obliteration of the residual cavity was performed in 161 (63%) of the patients: thoracoplasty, with or without removal of the first rib, was performed on 90 patients; an extramuscle periosteal plombage with Polystan sponge, on 63 patients; and a diaphragmatic paralysis, on 8 patients. Plombage with Polystan sponge was discontinued in 1954 because of empyema complications resulting from it; a preresectional or postresectional thoracoplasty was substituted, depending on the functional or anatomic condition of the residual parenchyma.

Anatomic Study of Synthetic Vascular Prostheses. P. Gauthier-Villars and P. Ganter. Presse méd. 67:763-764 (April 18) 1959 (In French) [Paris].

The authors made an anatomic study of the grafts of Ivalon implanted in the proximity of the aorta in 4 dogs, which were killed from 10 to 14 months after the operation. At the time of the intervention blood flowed promptly into the porous prosthetic material, from several seconds up to 2 minutes after the operation. A coating of fibrin and blood cells, which had formed on the outer wall of the graft, stopped the blood inflow. A coating of fibrin, from 1 to 2 mm. in thickness, covered the inner wall of the graft from 1 to 2 hours after the operation. Connective tissue from the adjacent areas penetrated into the space filled in afterwards by fibrin. There was no trace of a granulomatous or an inflammatory process taking place where the graft and the host tissue were joined. Formation of thrombosis was very rare.

In the course of the third month after implantation of the graft, the inner coating of tissue in the prosthetic tube became smooth and glossy; it is difficult to say whether this could be considered as a formation of a new endothelium. The grafts were permeable, and there was no evidence of inflammation in the adjacent area from 10 to 14 months after the operation. The lacunas in the graft either were empty or were filled with connective tissue. The graft was surrounded by tissue, which was continuous with the aortic adventitia of the host. The anastomotic areas presented intrusion, but not fusion, of the newly formed graft fibers into the host tissue. A conjunctival-hyaline tissue joined the curved extremity of the artery with the fibrous layer on the internal wall of the graft. The risks of thromboses or intolerance of the host tissue to the graft were minimum. Long-term inspections of operations in which Ivalon or other types of graft have been used as synthetic vascular prostheses will reveal whether this material is cancerogenic, as intimated by Oppenheimer and co-workers.

Relationship of Peptic Esophagitis to Spontaneous Rupture of Esophagus. J. M. Dorsey, R. P. Hohf and T. E. Lynn. A. M. A. Arch. Surg. 78:878-888 (June) 1959 [Chicago].

This report is concerned with observations on 9 patients with spontaneous rupture of the esophagus, observed at the Evanston (Ill.) Hospital from 1946 through 1957. Correct diagnosis was made in 4 of the patients, and operative repair of the esophageal tear performed. All these patients survived. In the remaining 5 patients the diagnosis of an esophageal rupture was established at autopsy. The majority of the patients were middle-aged. However, 3 were under the age of 5 years, and one surgical patient was only 3 days old. Spontaneous rupture of the esophagus refers to esophageal perforation in which there has not been direct external trauma to the esophagus. These cases differ from the much larger group of esophageal perforations that are secondary to instrumentation.

Spontaneous rupture of the esophagus is an acute surgical emergency. The rupture usually takes place during an episode of vomiting. An element of peptic esophagitis may be a predisposing factor. Initially, severe lower substernal, lower chest, or epigastric pain is prominent. There may be associated upper abdominal tenderness and guarding. Lower esophageal rupture should be considered in the evaluation of an acute upper abdominal syndrome. The patient appears critically ill, and a moderate to marked degree of shock is common. Within a short time the features of mediastinitis, with or without associated hydropneumothorax, predominate. Their appearance roentgenographically substantiates the diagnosis. Prompt thoracotomy, with closure of the rupture and adequate drainage of the pleural space, is the treatment of choice. Early recognition and treatment are essential if one is to reduce the morbidity and mortality of this condition.

Balanced Operations for Esophagitis Associated with Esophageal Hiatal Hernia. J. K. Berman and E. J. Berman. A. M. A. Arch. Surg. 78:889-896 (June) 1959 [Chicago].

The authors use the term "esophageal hiatal hernia" to describe the so-called sliding or short esophageal type, and they define this as a cephalad displacement of the cardia of the stomach above the diaphragm. This particular type of hernia is primarily a malfunction of several of the derivatives of the foregut, the parts of the alimentary canal nourished mainly by blood from the celiac axis and concerned primarily with digestion. Therefore, in a significant number of patients there is an association of hiatal hernia with esophagitis, duodenal or gastric ulcer, biliary tract disease, and pancreatitis. Moreover, it is well to look upon the foregut derivatives as having a common mucous-gland system. Esophageal hiatal hernia may be asymptomatic, but the history of patients with associated esophagitis is usually a long story of one or many of the following complaints: postprandial pain and discomfort, substernal burning (heartburn), dysphagia, pyrosis, dyspnea, anginoid attacks, regurgitation, aspiration with cough (particularly at night), vomiting, or hematemesis.

The authors underscore the fact that only a small percentage of patients with esophagitis and hiatal hernia need surgery, and that every patient should receive an adequate trial on medical management before any operative procedure is done. If the disease is refractory, if complications occur, or if associated lesions are present, surgery is indicated. In attempting to remedy the malfunction, operations must be balanced so that there will be (*a*) a restoration of the normal position of the esophagus and stomach, (*b*) a normal esophagogastric angle (angle of His; plica cardiaca), (*c*) a reduction in hyperacidity, (*d*) a ready egress of gastric contents through a widely opened pylorus (relieving intragastric pressure), and (*e*) a correction of any associated disease of the foregut. With this procedure the authors have obtained uniformly good results in a series of 19 consecutive patients who have been followed from 6 months to 8 years. All the patients except one have been relieved of their distressing symptoms, and this one is now improved and does not have esophagitis. There has been no recurrent herniation, and no patient has required further esophageal dilatation. An addendum to this paper states that 9 additional patients with esophagitis and hiatal hernia have been treated with balanced operations. Clinical results to date have been excellent.

Strictures of the Common and Hepatic Bile Ducts: A Study of More than Four Hundred Operations, with One- to Twenty-Five-Year Follow-Up. W. Walters, J. W. Nixon Jr., T. E. Hodgins and J. A. Ramsdell. A. M. A. Arch. Surg. 78:908-915 (June) 1959 [Chicago].

Follow-up studies were made by the Mayo Clinic on 265 patients who had undergone 308 operations for stricture of the bile ducts. All the operations were performed by the senior author. The patients were divided into 2 groups to contrast the 5-to-25-year results with the 1-to-5-year results. In the long-term group 191 patients, who had had 217 operations, replied to the questionnaire, and in the short-term group 74 patients, who had had 91 operations, were included. Approximately 20% of the patients had had 2 or more operations for stricture performed by the senior author. Excellent and good results followed 61% of the operations in the long-term group and 73% of those in the short-term group. Fair results were obtained in an additional 7 and 8% respectively.

The results from choledochocholedochostomy (duct-to-duct) and from choledochoduodenostomy were practically the same in each series, with good or excellent results from 68 and 69%, respectively, in the long-term group, and from 83 and 82% in the short-term group. These operations made up the major portion of the operations, although hepaticocholedochostomy and hepaticoduodenostomy, both single and double, with single or double hepaticojejunostomy were performed in appreciable numbers of cases with almost equally good results, even in the 30 cases in which it was necessary to dissect out both hepatic ducts from the liver parenchyma in order to anastomose them to the duodenum or jejunum. The best results, in general, followed the use of T-tubes as prosthetic devices left in the anastomosis from 6 to 9 months.

Of the 52 women in the short-term follow-up group, 4 had pregnancies that went to term after operation. Many of the patients with good and excellent results have reported 2 or 3 episodes of cholangitis the first year after operation; these then disappeared. This observation is important, because if attacks continue or worsen, it means obstruction of the anastomosis, and further operation is usually necessary. It is of interest that stricture was due to surgical injury in all but one of the 265 patients studied; in the one exception it was due to external trauma to the abdomen. Late deaths were due largely to severe cirrhosis, with and without hepatitis present at the time of operation, or to unrelated causes, such as cardiovascular lesions.

Lymphocysts: A Complication of Radical Pelvic Surgery. F. Rutledge, G. D. Dodd, Jr. and F. B. Kasilag, Jr. Am. J. Obst. & Gynec. 77:1165-1175 (June) 1959 [St. Louis].

A frequent serious postoperative complication of pelvic lymphadenectomy is an accumulation of fluid in the retroperitoneum at the dissection site. The resulting lymphocyst formation produces varying pressure effects on the ureters, bladder, rectosigmoid, and blood vessels and is considered responsible for a prolonged postoperative morbidity. Pelvic lymphadenectomy was performed on 281 patients, 81 of whom also underwent hysterectomy, at the M. D. Anderson Hospital and Tumor Institute of the University of Texas, in Houston, between January, 1955, and July, 1958. Most of the patients had squamous-cell carcinoma of the cervix. Lymphocysts developed in 68 of the 281 patients, an incidence of 24%.

There is no relationship between the incidence of lymphocyst formation and the stage of the carcinoma, though the incidence of the lymphocyst formation seems to be in direct proportion to the extent of the pelvic dissection. The greater the number of pelvic nodes removed, the higher is the incidence of lymphocyst formation, and, furthermore, the greater the number of cancer-positive nodes removed in performing lymphadenectomy, the higher the incidence of lymphocyst formation. It also seems that the incidence of lymphocyst formation is substantially higher when lymphadenectomy follows complete radiation therapy than it is after primary radical hysterectomy with bilateral node dissection. The clinical importance of a lymphocyst is determined by its size and location. The smaller cysts are well tolerated and tend to regress spontaneously. Symptoms attributable to lymphocysts do not become evident clinically until the usual postoperative discomfort has subsided. Of the 68 patients with lymphocyst formation, the conditions of 54 were diagnosed by the third postoperative week. The actual extent and significance of the lymphocyst formation can best be demonstrated by radiographic methods. The effect on the urinary tract and the colon is best demonstrated by pyelographic and barium-enema examination. While the initial symptoms prolong postoperative morbidity, the late complications are most important from the standpoint of survival. Among these are obstructive uropathy with uremia, intestinal obstruction, fistula formation, and infection of the lymphocyst. The commoner differential diagnoses are those of urinary retention, cystitis, hematoma, infection of the incision, and thrombophlebitis.

The patients in this series were given trypsin, 5 mg. intramuscularly, twice daily for 5 to 8 days. The injections were given in the gluteal muscle, starting the day before or immediately after the operation. The use of this drug did not reduce the incidence of lymphocysts, but their average size was reduced. Immediate, though temporary, relief can be obtained by aspirating the fluid, which should be repeated several times. Secondary infection of the lymphocysts requires strict sterile technique. Incision and drainage through the lower abdominal wall or through the vagina are advised if the lymphocysts become infected. Early incision and drainage are required if the lymphocysts obstruct the ureter and damage the kidney. Efforts to develop a method of prevention have not been wholly successful. It seems reasonable to make an effort to ligate those large lymphatic channels that are encountered during the dissection. Near the entrance to the femoral canal, and along the obturator nerve near its exit, large lymph vessels can often be identified and ligated.

Malignant Melanoma of the Anorectum. S. H. Q. Quan, J. E. White and M. R. Deddish. Dis. Colon & Rectum 2:275-283 (May-June) 1959 [Philadelphia].

The authors reviewed the records of all patients observed from 1929 to 1954 on the rectum and colon service of the Memorial Center for Cancer and Allied Diseases, New York City. Among a total of 4,500 patients with malignant tumors of the anorectal region, there were 21 (or less than 0.5%) with malignant melanoma. This incidence and the fact that only 117 cases of malignant melanoma of the anorectal region have been reported in the English medical literature show the relative rarity of the lesion. The ages of the 21 patients (11 men and 10 women) ranged from 27 to 85 years, all but 2 of them being over 40. The majority of the patients had the sensation that an abnormal mass was present, which was believed to be hemorrhoids or polyps, until the true nature of the lesion was determined by histological examination. Rectal bleeding was noted in 14 patients. The bleeding was usually minor in quantity but steady or recurrent, and not unlike that seen in patients with bleeding hemorrhoids. Some type of change in bowel habits was mentioned by 9 patients.

The primary tumor varied in apearance from a small, benign-looking, grape-like growth at the mucocutaneous junction to a large, ulcerating, deeply pigmented tumor occluding the anus. The smallest was a pigmented mole overlying a 1-cm. area of induration, and the largest was 6 cm. or more in diameter, completely obstructing the lumen of the rectal outlet. The majority of the tumors were not ulcerated, and were 3 to 5 cm. in their greatest diameter. At least 10 tumors were pigmented sufficiently to be visible to the unaided eye, the degree of pigmentation varying from a light gray to a violaceous black color. Six tumors showed only microscopic pigment, and 6 others were diagnosed histologically by the pathologist as amelanotic melanoma. In 19 of the 21 patients the melanoma arose in the anal skin or from the mucocutaneous junction, and if the rectal mucosa was involved, it was so only by upward extension. In several cases, although the greater part of the tumor was situated in the rectum, the lower border of the lesion was attached to the dentate line. In only 2 cases did the melanoma unquestionably arise in the glands of the rectal mucosa. Clinical evidence of metastasis developed in at least 12 patients while they were under observation, and none of these lived more than 12 months after the onset of metastasization.

Treatment varied in the course of years. In the 1930's local removal of the melanoma was combined with either external roentgen irradiation or with the application of radium. The longest survival with this treatment was 20 months. In the early 1940's a diverting colostomy was added to the therapeutic procedures, and one patient treated in this manner lived 48 months. The next method employed was abdominoperineal resection of the rectum, and this operation was followed by the 2 longest survivals in this series, namely, 60 and 96 months. When in 1950 lymph node dissection was added to the abdominoperineal resection of the rectum, the survival time decreased rather than improved. The authors feel that preoperative external irradiation, followed by abdominoperineal resection of the anorectum, or abdominoperineal resection of the anorectum, without irradiation, seems to be the treatment of choice. The average survival time of patients in this group was 33 months.

Anastomosis of Superior Vena Cava and Pulmonary Artery in the Surgical Treatment of Certain Congenital Defects of the Heart. A. N. Bakulev and S. A. Kolesnikov. J. Thoracic Surg. 37:693-702 (June) 1959 [St. Louis].

The authors report on a 5-year-old boy with the tetralogy of Fallot, who was operated on in the Institute of Thoracic Surgery of the Academy of Medical Sciences of the U. S. S. R., in Moscow, and in whom an anastomosis was performed between the superior vena cava and the pulmonary artery. The anastomosis was made with the aid of a stitcher with tantalum staples. The postoperative course was smooth. Cyanosis began to decrease from the first postoperative day and disappeared entirely by the time of discharge on the 17th postoperative day. Of 41 additional patients in whom an anastomosis was placed between the superior vena cava and the pulmonary artery, 14 died during the operation or in the postoperative period, 4 of them on the operating table, 7 within the first 24 postoperative hours, and 1 each on the 2nd, 3rd, and 45th postoperative day respectively. This relatively high mortality rate may be explained not so much by the surgical trauma itself as by the imperfect technique and anesthesia, which later was perfected. In 6 patients death was due to acute hemorrhage, and in 2 additional patients it was due to acute hypoxia resulting from poor function of the anastomosis because of disparity of the lumens of the anastomosed vessels. In these 8 patients postoperative mortality could thus be explained by defects of the surgical technique and by wrong indications for surgery. The postoperative course was smooth in those patients who stood the operation well.

Although the authors' experience with the surgical treatment of congenital heart disease with decreased pulmonary circulation by placing an anastomosis between the superior vena cava and the right branch of the pulmonary artery is limited, they feel justified in drawing the following conclusions: 1. The use of such an anastomosis for the treatment of patients with insufficiency of pulmonary circulation has demonstrated its usefulness and effectiveness in the treatment of such cardiac lesions. 2. This operation is not excessively complicated and can be performed by any thoracic surgeon who has mastered the technique of vascular suture. 3. The advantages of this operation as compared with the interarterial anastomosis are as follows: decrease in the overload of the right ventricle; decrease in the overload placed on the system of the pulmonary artery, which leads to the subsequent sclerosis of the pulmonary vessels; considerable increase in the quantity of oxygenated blood; avoidance of recirculation of the blood through the interarterial anastomosis; and avoidance of endarteritis, which supervenes occasionally at the site of the interarterial anastomosis.

Dupuytren's Contracture: A New Concept of the Pathogenesis Correlated with Surgical Management. J. V. Luck. J. Bone & Joint Surg. 41A:635-664 (June) 1959 [Boston].

The author, who has studied palmar and plantar Dupuytren's contracture since 1936, feels that the factor of heredity is the best established of all potential etiological factors, and that neither chronic inflammation, nor trauma, nor neurological or psychological factors are primary etiological agents in this disease. His interpretation of the pathological anatomy of Dupuytren's contracture and his concept of the pathogenesis were evolved from the study of tissues from more than 200 hands and 28 feet with Dupuytren's contracture. The initial and essential lesion is a focus of proliferating fibroblasts. A focus may exist as a solitary lesion in the palmar or plantar fascia, but multiple foci are the rule. In most instances, the fibroblastic focus creates a palpable nodule. The fibrous cords form subsequent to the nodule and are related to its involution. The author differentiates a proliferative, an involutional (contracting), and a residual stage in the development of Dupuytren's contracture.

In the proliferative phase, the nodule is a focus of fibroblasts which resembles a fibroma. Nodules may be solitary or multiple. Multiple nodules coalesce and form a plaque. While the nodules appear to originate in, or to be superficial to, the palmar fascia, they expand toward the surface. This creates a protruding mass easily identified by the palpating finger. During expansion toward the surface the nodule first replaces the subcutaneous adipose tissue and then the deep layers of the skin. With attachment to the palmar aponeurosis and to the undersurface of the skin, the stage is set for the contraction of the involutional process to create a reactive fibrous cord. The contraction of the nodule creates the most prominent aspect of Dupuytren's contracture—the flexion contractures of the palm and fingers. As collagenization and contraction evolve, the nodule becomes smaller and draws in or puckers the surrounding skin. In addition, it may become anchored to an underlying tendon sheath or joint capsule. If, for example, a nodule is over a metacarpophalangeal joint, the contracture draws the metacarpophalangeal joint into flexion. The cord of Dupuytren's contracture represents reactive functional hypertrophy in response to the repeated tension stresses on the band of fascia from which the nodule took its origin. The fibrous cords grow large in persons who use their hands a great deal. As involution progresses, the nodule becomes less well defined until it disappears, leaving only a focus of dense adhesions and the reactive proximal fibrous cord which is almost acellular and tendon-like. This is the residual stage, during which it is not to be expected that vitamins, hormones, roentgen-ray therapy, splints, and various types of physical therapy would have any significant influence. Nonoperative methods are advisable only if the disease is still active and the nodules are in either the proliferative or the early involutional stage. The results of the injection of hydrocortisone acetate into nodules have been disappointing.

According to the method of surgical management, which is based on the author's concept of pathogenesis, it is not necessary to do a radical excision of all of the palmar fascia and associated fibrous cords, it is necessary only to excise the nodules completely. If Dupuytren's contracture is in the involutional stage, procedures which do not include excision of the nodules, such as subcutaneous fasciotomy, will usually be followed by at least a partial recurrence of the contracture. Subcutaneous fasciotomy is applicable, however, after the nodules have undergone involution, and there are fascial cords proximal to the nodules. These cords can be resolved by subcutaneous fasciotomy. Operations, based upon the stage of the pathological process, were carried out during a 10-year period on 206 hands of 154 patients. The over-all results were good in 164 hands (79.6%), fair in 29 (14.1%), and poor in 13 (6.3%).

Current Status of Surgical Treatment of Ventricular Septal Defect. D. A. Cooley. Dis. Chest 35:651-662 (June) 1959 [Chicago].

Of a collected series of 345 patients undergoing operation during bypass for a variety of congenital and acquired cardiovascular lesions, 130 had isolated ventricular septal defect, which appears to be the commonest congenital cardiac defect requiring open heart surgery. Analysis revealed highly satisfactory results among those between the ages of 2 and 15 years. Among 71 patients in this age group there were 5 deaths, or a mortality of 7%. During infancy the risk of operation is substantially higher. However, a salvage of 70% of patients less than 2 years of age justifies operation even in these critically ill patients.

Pulmonary hypertension is frequently associated with ventricular septal defect. As pulmonary vascular resistance increases in these patients, reversal of the intracardiac shunt may lead to cyanosis. The extent of pulmonary vascular changes influences the risk of operation. Although patients with a so-called Eisenmenger's complex, associated with cyanosis, clubbed nails, polycythemia, and right ventricular hypertrophy, are not satisfactory candidates for surgical treatment, the author operated successfully on a number of patients with balanced or combined left-to-right and right-to-left shunts. Future developments may help control the physiological effects of the increased pulmonary vascular resistance and thus make possible operative correction in almost all patients with ventricular septal defects.

Etiology and Pathogenesis of Dupuytren's Contracture. W. Heim and H.-G. Buchberger. Chirurg 30:212-216 (May) 1959 (In German) [Berlin].

Reviewing the history of contracture of the palmar fascia after its first description by Dupuytren in 1832, the authors mention several theories that have been advanced with regard to its etiology and pathogenesis. Its familial occurrence was noted early and suggested a hereditary etiology. Chronic trauma as a possible eliciting factor was also suggested by some of the early investigators. Increased irritability of the sympathetic nervous system, resulting from various causes, including toxic (alcohol, nicotine, lead), but particularly from osteochondritic changes in the cervical portion of the vertebral column, with contracture of the intervertebral foramens, has been suggested by several investigators as possibly contributing to the development of the contracture of the palmar fascia. Changes in the central or peripheral nervous systems, tumor formation, reparative proliferation, and microtraumatic ruptures of fibers of the palmar aponeurosis are other etiological or pathogenetic factors that have been mentioned.

The authors investigated etiological factors in 76 patients with Dupuytren's contracture, and found that 3 factors were encountered most frequently, although they did not always concur; these were hereditary predisposition, trauma, and abnormal tonus of the sympathetic nervous system. A hereditary tendency could be demonstrated in 12 of the 76 patients (15.8%), but since many of the parents of the patients had already died when the lesion became evident in the patients, and since their own children had not yet reached the age of manifestation, it is assumed that the incidence of the hereditary tendency is probably greater than 15.8%. Investigating the role of trauma as a possible etiological factor, the authors found that in 56 of their 76 patients occupations or sport activities were such as to involve chronic trauma to the palmar surface. It proved difficult to demonstrate increased irritability of the sympathetic nervous system, although investigations were made on the vascular nervous systems. Earlier reports on the higher incidence of Dupuytren's contracture in brewery workers and in epileptic patients could be corroborated, but the incidence in epileptic patients was not as high as indicated in earlier reports. The authors feel that the development of Dupuytren's contracture in the epileptics indicates that toxic effects, in this case from drugs given to suppress the convulsive attacks, play a part in the etiology. They conclude that the pathogenesis of Dupuytren's contracture is a complex process in which several etiological factors are involved.

A Clinical Study of 1,000 Consecutive Cases of Mitral Stenosis Two to Nine Years after Mitral Valvuloplasty. L. B. Ellis, D. E. Harken and H. Black. Circulation 19:803-820 (June) 1959 [New York].

A study is presented of 1,000 patients with predominant mitral stenosis, who were operated on by valvuloplasty between 1949 and 1956. This series included 4 groups. There were no patients in group 1, that is, patients without significant symptoms. Group 2 included 19 patients who were somewhat handicapped by symptoms but were able to carry on a sedentary occupation, and the condition was not progressive. The 711 patients in group 3 suffered mainly from pulmonary symptoms, which were usually progressive in nature, and were sufficiently handicapped, so that ordinary activities were significantly limited. If these patients had had overt congestive failure, it had been because of some unusual precipitating cause, such as pregnancy or a serious infection, and they had rapidly recovered from it. Group 4 was comprised of 270 patients with more severe symptoms, who were mostly cardiac invalids suffering from chronic congestive failure or who were maintained in a precarious state of compensation only by vigorous medical means. All but 2 of the 913 survivors of the operation have been followed at least one year, and most of them up to the latest anniversary of their operation from 2 to 8 years ago.

The survival of the patients was better than would have been expected under medical management. Sixty-nine per cent of the survivors of the operation in groups 2 and 3 improved, and 55% of those in group 4. The percentage improved has tended to drop somewhat with succeeding years of follow-up. In group 3, fibrillating patients and those over 40 years of age did less well than those in normal rhythm or under 40. With increasing degrees of mitral insufficiency, the differences were more striking at the end of 5 years than at the end of 1. Patients with preoperative tight mitral stenosis did better than those whose stenosis was less severe. The presence of associated valve disease (usually aortic) of mild degree did not affect the ultimate outcome. The "postoperative" or "postcommissurotomy" syndrome occurred in an estimated 30.8% of patients, but its presence did not have any bearing on the results. A group of 228 patients whose condition deteriorated after substantial improvement persisting at least one year were analyzed. Factors that were found in a significantly higher percentage of these patients than in those who maintained their improvement were mitral insufficiency, unsatisfactorily performed valvuloplasty, and rheumatic fever occurring since the operation.

Interventricular Septal Defects with Associated Major Vascular Anomalies: Report of Three Cases. G. Robinson, P. Glotzer, M. Gilbert and others. Am. J. Cardiol. 3:746-753 (June) 1959 [New York].

The authors present the histories of 3 patients, ranging in age from 6 to 9 years, who were subjected to open heart repair of interventricular septal defects, and in whom unusual associated anomalies were simultaneously corrected. An extracorporeal pump oxygenator of the DeWall type was used in all 3 operations, and elective cardiac arrest was induced with the aid of potassium citrate. In the first of the 3 patients the preoperative diagnosis was complete and correct. At operation a true right-sided aortic arch was found with a retroesophageal patent ductus arteriosus entering the left pulmonary artery. The left subclavian artery arose from the superior aspect of the ductus arteriosus and ascended along the left side of the superior mediastinum. The ductus arteriosus was divided at its
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The emergency operation consisting of a suture with omentopexy gave the best results as a lifesaving procedure, whereas resection was better than the former to prevent recurrence. If resection were contraindicated, suture with omentopexy was probably the best choice. Operation by the technique of Taylor presented a higher operative risk, and its long-term results were not superior to other surgical procedures.

Elbow Out of the Window Injuries: A Follow Up Study of 50 Cases. G. R. Rieth. J. Louisiana M. Soc. 111:220-223 (June) 1959 [New Orleans].

An elbow-out-of-the-car-window injury can vary from a mild abrasion to a devastating crushing avulsion resulting in amputation. The author reviews observations on 50 patients treated at the Charity Hospital of Louisiana, in New Orleans, over the last 10 years for injuries sustained from riding with the elbow out of an automobile window. Tables analyzing various aspects of the injuries showed that most of them were multiple fractures. Seven patients had combined fractures of the shaft of the radius, ulna, and humerus with or without dislocation of the elbow; 6 had fractures of the radius and ulna with or without dislocation of the elbow; 5 had fractures of the olecranon and humerus; 5 had Monteggia's fracture-dislocation and fracture of the humerus; and 15 had fractures of single arm bones. Many of these injuries presented large soft tissue avulsions and extensive neurovascular lesions. Muscle avulsions were observed in 16 patients; injuries to the radial, median, or ulnar nerves, in 18 patients; arterial injuries, in 4 patients; and various dislocations, in 19 patients, 13 of which involved the radial head.

Since the majority of injuries were of the open type, thorough debridement was necessary in 35 patients. Open reduction was employed in 23 patients; internal fixation, in 13; bone grafting, in 10; and amputation, in 5. Excisions, grafting, and arthrodesis were necessary in a few patients. From a review of the results, the author gained the impression that in these injuries, where skin coverage is possible, where contamination is not excessive, and where loss from comminution is minimal, a definitive procedure would be in order at the time of debridement, to reassemble the fragments, maintaining them in their proper relationship by internal fixation if necessary. This gives the best chance for early recovery of function and lessened over-all disability.

An Attempt to Prolong the Time-Limit of Cardiotomy Under Hypothermia by Perfusion of the Brain and Provoked Cardiac Arrest. P. Michaud, E. Saubier, H. Viard and others. Semaine hôp. Paris 35:1845-1849 (May 28) 1959 (In French) [Paris].

Experimental studies were carried out in dogs in an attempt to prolong the 8-minute time-limit imposed in cardiotomy under hypothermia. Cooling of the dogs was kept within the admitted limits of 30 C (86 F), but in order to obtain prolongation of the circulatory arrest, the protection of the brain and the heart had to be assured. This was realized by a permanent cerebral perfusion, by means of a sigma-motor pump, utilizing blood previously obtained from a donor that had been given heparin sodium and an overdosage of oxygen. The blood was collected in silicon flasks. Cardiac arrest was obtained, after clamping the ascending aorta, by an injection above the clamp of potassium citrate combined with heparinized oxygenated blood. Cerebral perfusion was performed by directing the blood toward the brain by means of a simultaneous triple clamping of the aorta above the right brachiocephalic trunk and below the left subclavian artery, the perfusion being given into the right subclavin artery below the 2 carotid arteries.

At the beginning, the amount of blood given was about 3 to 4 cc. per minute per kilogram of the dog's body weight. In order to save blood, and also to take advantage of the hypothermic protection of the brain, perfusion was always begun with a slight delay of 3 to 5 minutes after clamping, or in practice immediately after dilatation of the pupils had started. It was continued without interruption for 20 minutes, which period was arbitrarily determined by the authors as the duration of circulatory interruption. Simultaneously, the cerebral venous reflux was assured by simple gravity into a measuring glass. Overcharge and brain stasis were avoided by the fact that venous return flow was always fairly exactly the same quantity as that of the perfused blood. After the 20 minutes, the heart had to take over both its own circulation and that of the brain. It is, therefore, important that a vigorous cardiac activity with normal tonicity and rhythm be rapidly restored.

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In the other 2 patients the preoperative diagnosis was not complete. In the second patient the anomalous pulmonary venous drainage was not diagnosed preoperatively. At operation the right ventricle was found to be greatly enlarged. A large anomalous left upper lobe pulmonary vein was seen to drain into the left innominate vein. The remainder of the pulmonary venous drainage was normal. After cardiopulmonary bypass was established and arterial perfusion performed through the left subclavian artery, and after elective cardiac arrest was established, right ventriculotomy revealed a defect in the outflow tract of the right ventricle, which was closed. A side-to-side anastomosis was then made between the left atrial appendage and the anomalous left superior pulmonary vein. The anomalous vein was then ligated and divided at its insertion into the left innominate vein. In the third patient clinical and laboratory methods of investigation established the diagnosis of coarctation of the aorta and interventricular septal defect preoperatively, but the patency of the ductus arteriosus was not detected. The findings at operation were those of a typical coarctation of the aorta with patent ductus arteriosus. The ductus was divided, and the coarctation was excised. An end-to-end anastomosis was then performed between the divided ends of the aorta. Cardiopulmonary bypass was established with arterial perfusion performed through the left subclavian artery. Ventriculotomy revealed a 7-mm. defect in the inflow tract of the right ventricle. This was closed. The subclavian artery was repaired after removal of the catheter. The postoperative course was uneventful.

Treatment and Results of Perforated Gastroduodenal Ulcer: A Statistical Contribution. G. Belloli. Minerva chir. 14:432-435 (April 30) 1959 (In Italian) [Turin, Italy].

The author made a statistical investigation in a group of 100 male patients, aged between 20 and 66 years, all of whom but one underwent an emergency operation for a perforated gastroduodenal ulcer during the period between 1947 and 1956.

The incidence of the disease tended to increase progressively throughout this period. There were only 3 operative deaths. One patient died of hemorrhage a month after the operation. Perforation recurred in 3 patients from 4 to 5 years after the operation. Of 94 patients available for follow-up, results were very good in 14, good in 23, moderate in 12, fair in 5, and poor in 34. Long-term postoperative results were slightly better in patients with duodenal than with gastric ulcer. Perforation of acute gastroduodenal ulcer was present in about one-fifth of the patients, most of whom were under the age of 30. Long-term postoperative results were better in patients with acute than with chronic variety of the disease. The incidence of the disease was higher among manual than among white-collar workers. Long-term postoperative results were better among white-collar than among manual workers.

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At the beginning, the amount of blood given was about 3 to 4 cc. per minute per kilogram of the dog's body weight. In order to save blood, and also to take advantage of the hypothermic protection of the brain, perfusion was always begun with a slight delay of 3 to 5 minutes after clamping, or in practice immediately after dilatation of the pupils had started. It was continued without interruption for 20 minutes, which period was arbitrarily determined by the authors as the duration of circulatory interruption. Simultaneously, the cerebral venous reflux was assured by simple gravity into a measuring glass. Overcharge and brain stasis were avoided by the fact that venous return flow was always fairly exactly the same quantity as that of the perfused blood. After the 20 minutes, the heart had to take over both its own circulation and that of the brain. It is, therefore, important that a vigorous cardiac activity with normal tonicity and rhythm be rapidly restored.

The experiments were successful in 7 out of 12 dogs. An important factor in ensuring a good cardiac reanimation is that coronary perfusion should be as large as possible at the time of reactivation of the heart. Induced cardiac arrest does not seem to be incompatible with hypothermia, although it increases the risks involved. The main inconvenience of this technique is that a large amount of stored blood is needed in order to ensure an adequate supply for the coronary circulation after the cerebral circulation has been provided for.

Considerations on Primary Tumors of the Gastric Stump after Resection for Ulcer. C. Colizzi and L. Servadio. Chir. gen. 8:150-169 (March-April) 1959 (In Italian) [Pisa, Italy].

The authors discuss the incidence of primary tumor of the gastric stump in 8 patients, 5 of whom had previously been operated on for gastric ulcer and 3 for duodenal ulcer. Symptoms of the tumor appeared during a period of from 6 to 16 years after the operation for ulcer in 7 patients, and before the 6th postoperative year in 1. The patients were well between the operation for ulcer and the appearance of symptoms of the tumor. Disturbed digestion was the first and only symptom of the succeeding disease. Specific symptoms of the gastric tumor appeared later. Total achlorhydria was revealed in 4 patients, and the malignant process involved the total gastric stump in 4. The correct diagnosis of the tumor was made in most patients at an advanced phase of the disease. The reason for the belated correct diagnosis was that the symptoms after the operation for ulcer were interpreted as postoperative manifestations of the gastric resection for ulcer. The authors believe that an early diagnosis of primary tumor of the gastric stump after resection for ulcer can be made by roentgenologic examination with semifluid barium as the contrast medium. It was possible to perform a radical operation on 5 patients (40%). There were no operative deaths among the patients who underwent the radical operation. The survival period was longer among those who had the radical, rather than a palliative, surgical treatment.

A Rare Case of Duodenal Ulcer with Hemorrhage Being the Only Symptom of the Disease in a Child, 7 Years of Age. V. Ambrosi and A. E. Vaccato. Acta chir. ital. 15:469-480 (May-June) 1959 (In Italian) [Padua, Italy].

A boy, 7 years of age, was operated on for duodenal ulcer. An episode of considerable melena and anemia with no other accompanying symptoms developed a year and a half before the operation. The patient was hospitalized for 20 days and received coagulants which resolved the disorder. A roentgenologic examination of the digestive tract was not illuminating. The patient subsequently had 3 more episodes of melena, not accompanied by other symptoms, and coagulant therapy once more brought about remission of the episodes. A small shadow, the size of a pea, was revealed in the duodenum on roentgenologic examination of the digestive tract and was diagnosed as a duodenal ulcer in the course of the 4th episode of melena. The patient underwent a gastroduodenal resection by the procedure of Hofmeister-Finsterer. The operation was well tolerated by the patient, and the postoperative course was uneventful. The macroscopic finding of the resected material was a duodenal ulcer, which diagnosis was confirmed by microscopic examination. The authors suggest a medical–dietary treatment for duodenal ulcer in childhood before undertaking surgery. If there are recurrent episodes of hemorrhage and an ulcerative lesion, however, these are to be treated by gastroduodenal resection.

NEUROLOGY & PSYCHIATRY

The Periodic Migrainous Neuralgia of Wilfred Harris. E. R. Bickerstaff. Lancet 1:1069-1071 (May 23) 1959 [London].

The author reports on 21 men and 9 women with a special type of recurrent facial pain and headache for which the term "periodic migrainous neuralgia" was coined by Wilfred Harris in 1926. Twenty-three of the 30 patients had their first attack of pain before the age of 40, and the highest incidence was late in the third decade. One 11-year-old boy was the youngest on record. The age of the patients at the time the diagnosis was made differed strikingly from the age of onset, for many patients had had recurrent bouts for a long time. Only 4 patients had had attacks for less than one year, and 10 had experienced attacks for over 10 years, 2 of these for over 30 years. Thirteen gave a history of migraine which had ceased at the onset of neuralgia. Many patients gave a history of migraine in near relatives. Self-administered ergotamine tartrate injections in doses of 0.25 mg., 3 times daily for 5 days out of each week, were given to 16 patients. Twelve patients had complete relief of symptoms from the first full day of injections; 2 had only partial relief immediately, but they obtained complete relief by increasing each injection to 0.5 mg. One patient's nocturnal attacks ceased, but attacks developed at irregular and unpredictable times during the day, and he preferred to discontinue the injections. One patient was a therapeutic failure. Four patients vomited after each injection for the first few days, but this ceased spontaneously without altering the dose. In one 56-year-old patient shortness of breath on exertion and pain in the chest occurred after several months of treatment, but cleared on stopping the injections. In 3 patients the neuralgia was completely controlled, but attacks of ordinary migraine returned. Horner's syndrome developed on the affected side in 3 patients.

The syndrome of periodic migrainous neuralgia is well documented but poorly recognized. It consists of paroxysmal unilateral facial and orbital pain accompanied by autonomic disturbances, arising with clockwork regularity, usually at night, and in bouts lasting several weeks, with spontaneous cessation. The success of treatment by prophylactic self-administered ergotamine tartrate has been confirmed. The high incidence of migraine both in the patients' own past histories and in those of their relatives, a tendency for migraine to occur during control of the neuralgia, the development of migraine at the age of 16 years in the boy who was 11 at the onset of the neuralgia and 13 when the neuralgia ceased spontaneously, and the occurrence of the syndrome in 2 brothers, one of whom had had migraine before the onset of the neuralgia, present sufficient evidence to support the suggestion that periodic migrainous neuralgia is a variant of the migraine symptom-complex.

Alimemazine Tartrate (6549 RP), Its Use in Psychiatric Therapy. A. Fernandez Zoila, J. Basset and M. Lebreton. Presse méd. 67:935-936 (May 9) 1959 (In French) [Paris].

Alimemazine tartrate, an amino derivative of phenothiazine, is a powerful neuroleptic acting upon the central nervous system. Its empirical formula is $(C_{18}H_{22}N_2S)_2$, $C_4H_6O_6$. Its sedative properties make it valuable for use in psychiatric therapy. Fifty women who had had psychiatric illnesses for a long time, and who had had other treatment which was not successful, were given alimemazine tartrate in progressively increasing doses of 400 to 600 mg. by mouth, preferably in the form of drops, and 150 to 200 mg. parenterally, for from 2 weeks to 2 months. The muscular relaxation obtained assured a good emotional readjustment with agreeable behavioral changes. The sedative action on the central nervous system assured regular nocturnal sleep unperturbed by extrapyramidal muscular hypertonicity, without marked somnolence during the day. The authors observed an antidepressive and hallucinolytic action with controlled euphoria and better social adjustment. The usual inconveniences associated with treatment by chlorpromazine and reserpine were not observed. The only examples of intolerance were some lipothymic tendencies without a lowering of blood pressure in older patients and 2 paroxysmal epilepsies in patients with progressive organic disease. Doses were readjusted for these patients without interrupting the treatment.

The 50 patients were divided into 4 groups. Group 1 consisted of 19 women with a long history of psychiatric illness, mostly of organic origin, who were the least influenced by treatment. Group 2 had 16 women with psychotic depression; 8 of these were able to leave the center (Treatment and Social Readaptation Center of Villejuif), and all the others except one showed great improvement. Group 3 consisted of 5 women with psychoses of delirious or schizophrenic structure and of 2 with manic states, all of whom benefited greatly from treatment. Group 4 had 8 patients with psychopathic personalities or serious neurotic manifestations whose conditions were improved by treatment with alimemazine tartrate.

Poliomyelitis: Southern Rhodesia, 1958. D. M. Blair. Central African J. Med. 5:219-223 (May) 1959 [Salisbury, Southern Rhodesia].

In 1958 the author had given an account of the natural history of poliomyelitis in Southern Rhodesia since the end of the 1939-1945 war. This showed that in earlier years the incidence of the disease in the African population had not been high, and, in fact, not until 1957 had the African notifications exceeded those in non-Africans, a very much smaller population group. It was also clear that notification of nonparalytic cases was very rare in Africans and that it was better to compare the race incidence on paralytic cases only. During 1957 the number of cases reported in each of the age groups, 0.4 years, 5-14 years, and 15 years and over, was much the same in the non-African population. However, in the African population the number of cases was far greater in the age group under 5 years. An extensive vaccination campaign was launched in 1957 and was pursued in the face of the prevailing epidemic of poliomyelitis. The amount of vaccine distributed indicated that about all non-African (European) children, from 1 to 15 years of age, had received at least 2 inoculations with vaccine. During 1958 supplies of vaccine in the Federation and Southern Rhodesia were freely available from commercial sources, without limit on the number of doses which could be given or limit on age groups which could be immunized.

The following are the general conclusions of the study of the incidence of poliomyelitis in Southern Rhodesia during 1958: 1. The monthly incidence during 1958 did not resemble the experience of previous postepidemic years, and the scatter of cases throughout the year seems to indicate that the disease was still fairly active and had not settled down to the usual interepidemic state. 2. The higher proportion of cases among Africans seems to have come to stay, although the heavier attack rate among children under the age of 5 years remains a feature in this racial group. 3. Despite the extensive vaccination on non-Africans under 15 years of age, the 1958 experience of incidence by age groups lends no support to the view that vaccination of this group protects it, at least from paralytic accidents of poliomyelitis. Of the 13 cases of poliomyelitis in non-Africans under 15 years of age, 6 were in vaccinated children, 2 of whom had received 3 inoculations. 4. The proportion of paralytic attacks in the vaccinated group of Africans was higher than in the non-Africans who had not been vaccinated. 5. There was, however, some clinical evidence that recovery from the paralytic attacks in vaccinated persons was more speedy than would have been expected from general experience.

Recurrent Paralytic Poliomyelitis: Report of a Case, Documented with Virus Isolations. S. N. Faro. New England J. Med. 260:1177-1178 (June 4) 1959 [Boston].

The author reports on a 3-year-old girl who had a mild but characteristic attack of paralytic poliomyelitis due to type 3 poliomyelitis virus which was isolated in HeLa and monkey kidney cells from the patient's feces. No serologic studies were performed at that time. The patient recovered, with only residual weakness in the internal rotator of the left leg, and remained well for 9 months, until she awoke one morning with a stiff neck and a temperature of 103 F (39.5 C). She was readmitted to the Elizabeth Kenny Institute, in Jersey City, N. J., for considerable weakness of both legs and the abdominal muscles, and on the third hospital day she was in a position of opisthotonos, with almost complete paralysis of the right leg. Type 1 poliomyelitis virus was isolated from stool specimens obtained on the 5th, 6th, and 7th hospital days. The patient was treated with hot packs, stretching, and physical therapy and improved considerably, but the right leg remained partially paralyzed. A brace was applied to this leg, and she will probably have to wear it permanently. Complement-fixation tests were performed on 3 blood specimens; the results were positive for poliomyelitis virus, types 1 and 3. The case of this patient is believed to be the first reported in the literature in which it was possible to isolate 2 different poliomyelitis viruses from one such patient. It also appears to be the first reported case of a second attack of poliomyelitis within a year of the first attack.

PEDIATRICS

Intracranial Calcifications After Tuberculous Meningitis. P. F. Peruzzi. Riv. clin. pediat. 63:94-99 (Jan.) 1959 (In Italian) [Florence, Italy].

Ten children, 6 months to 17 years of age, with tuberculous meningitis, who had been treated at the pediatric clinic of the University of Florence and had been followed periodically from 1947 to 1953, presented intracranial calcifications. Nine of the children also presented neurological, psychic, or endocranial complications. The intracranial calcifications were found roentgenologically during the period of hospitalization (lasting from 10 to 14 months) in 3 patients and from 2 to 5 years after discharge in the remaining 7 patients. They were present in the choroid plexuses in 5 patients, in the suprasellar area in 4, and in the falx cerebri in 1.

The author believes that an intracranial calcification is the result either of certain drugs, such as streptomycin or aminosalicylic acid, which are used in the treatment of tuberculous meningitis, or of a severe form of the disease which, especially when treated late, causes the formation of caseous foci that in time become calcified. Of the 10 patients described by the author, 1 had been treated with streptomycin and sulfone; 4, with streptomycin, aminosalicylic acid, and sulfone; 1, with streptomycin and aminosalicylic acid; and 4, with streptomycin and isoniazid (4 to 6 mg. per kilogram of body weight). An adequate dose of isoniazid prevents the fibrosis or cicatrization that results from the tissue reaction caused by streptomycin; it also facilitates the absorption of necrotic material through vasodilatation; but the dose given to the 4 patients who received the combination of streptomycin and isoniazid was too low to have this effect. The disease was in an advanced stage in the 10 patients when treatment was started.

Tuberculous Meningitis: Clinical and Statistical Data on 332 Cases Received Between Jan. 1, 1953, and Dec. 31, 1956. P. F. Peruzzi. Riv. clin. pediat. 62:159-181 (Aug.) 1958 (In Italian) [Florence, Italy].

Three hundred thirty-two patients, from 2 months to 66 years of age, with tuberculous meningitis were treated in a clinic of the University of Florence from Jan. 1, 1953, to Dec. 31, 1956. Most of the patients received general (oral) and local (parenteral) therapy with various antituberculous drugs. Isoniazid and streptomycin made up the basic therapy and in some patients were combined with aminosalicylic acid, viomycin, or cortisone. Isoniazid was given orally in a dose of 5 to 10 mg. per kilogram of body weight during 1953 and in a dose of 10 to 20 mg. per kilogram of body weight from 1954 on. It was given parenterally to patients with severe forms of the disease and to those who could not receive it orally, being injected into the cisterna cerebellomedullaris in a daily dose of 10 to 25 mg., depending on the age and weight of the patient. Among other forms of parenteral administration, isoniazid combined with streptomycin was injected into the lumbar region in a dose of 1 to 2 mg. per kilogram of body weight. A dose of isoniazid in isotonic sodium chloride solution, 3 to 5 mg. per kilogram of body weight, was administered daily by intravenous drip infusion to 87% of the patients. The course of intravenous injections varied from a minimum of 10 to a maximum of 55 to 60 infusions, depending on the condition of the patient.

Streptomycin was given parenterally in a dose of 10 to 15 mg. per kilogram of body weight (maximal dose, 600 mg. per day); it was also injected into the lumbar region in a dose of 0.5 to 1 mg. per kilogram of body weight. Since 1953 patients with severe forms of the disease or with abdominal or kidney localizations have received aminosalicylic acid in dextrose solution (given always by drip infusion, 15 to 30 injections) in a dose of 100 to 200 mg. per kilogram of body weight. Good results were obtained during 1951-1952 and again during 1955-1956 by using viomycin in the treatment of patients who presented involvement of the auditory system and who had tuberculous disease due to mycobacterium tuberculosis which was resistant to streptomycin. Since 1955 cortisone preparations have been given parenterally, in 10-to-30-day courses, to 92% of the patients; a daily dose of 2.5 to 5 mg. was injected into the cisterna cerebellomedullaris, and a daily dose of 1 to 3 mg. into the lumbar region. Cortisone preparations were given orally only to patients with the severest forms of the disease in a dose of 0.5 mg. per kilogram of body weight or, as beginning therapy for 5 to 7 days, in a dose of 3 to 5 mg. which was gradually reduced.

Two hundred seventy-three patients (82%) recovered, and 59 (18%) died. The following factors affected the course of the disease: 1. Age. Mortality rate among patients up to 2 years of age was 38%, and among those over 40 years it was 25 to 60%. 2. Severity of condition on admission. Sixty-two per cent of the patients admitted with tuberculous meningitis in an advanced stage recovered; also 86.5% of those with the disease in an intermediate stage, and 98% of those in the initial stage. 3. Previous inadequate treatment before hospitalization. Miliary tuberculosis did not constitute an aggravating factor. The rate of mortality from tuberculous meningitis declined between 1953 and 1956. Eleven patients with severe form of the disease suffered purulent meningitis; 9 of them died. Eight patients who had been dismissed too early on account of a normal blood picture suffered relapse. Late neurological, psychic, and endocrinal complications occurred in 59 patients, but a decline in the incidence of sequelae was noticed in the last 3 years of observation.

Occurrence of Pseudotumor Cerebri (Benign Intracranial Hypertension) During Treatment of Children With Asthma by Adrenal Steroids: Report of Three Cases. S. C. Dees and H. W. McKay, Jr. Pediatrics 23:1143-1151 (June) 1959 [Springfield, Ill.].

Pseudotumor cerebri is a relatively rare condition, particularly in children, and has not been reported in patients receiving adrenal steroid therapy. This prompted the authors to report the history of 3 boys, aged 4, 5, and 6 years, who were admitted to Duke University Medical Center, Durham, N. C., and in whom pseudotumor cerebri developed during a period when the dosage of steroid was being decreased to low levels. The boys had received continuous steroid treatment for several years, beginning in late infancy. They presented the following symptoms at the time of admittance: severe headache, anorexia, nausea, intractable projectile vomiting, diplopia, and neurological signs, including paresthesia, weakness, ataxia, and dysarthria. Characteristic physical findings were papilledema, cranial nerve palsies, normal blood pressure, very short stature, obesity, and "moon" facies. The cerebrospinal fluid was under greatly increased pressure but was otherwise normal, and the ventricular systems were small but normally situated. The boys had acquired the appearance of pituitary basophilism (Cushing's disease).

The mechanism by which pseudotumor cerebri developed in these 3 children could not be determined. No evidence for an acute allergic reaction in the central nervous system could be found, nor did hypoxia seem to be a cause for pseudotumor cerebri, because both previous and subsequent attacks of asthma had not reproduced signs of the condition. All the children had always had relatively high concentrations of hemoglobin regardless of the degree of asthma. There was no significant dehydration, and fluid therapy quickly restored the mild electrolyte changes to normal. Intensive investigations failed to clarify the etiology of pseudotumor cerebri. The considerations discussed by the authors lead to the assumption that it may be an unusual reaction to long-term steroid therapy or to withdrawal of steroids after prolonged use. It is believed that some form of adrenocorticosteroid insufficiency may have been involved in the development of this condition.

Kwashiorkor, as Seen by the Practitioner (Based upon 55 Clinical Observations). A. Bezon. Presse méd. 67:932-934 (May 9) 1959 (In French) [Paris].

The study of 55 cases of African kwashiorkor enabled the author to draw conclusions about the etiological and clinical aspects of this disease. Late weaning and psychological upsets can play a part in the etiology of this disease, as may be seen by the example of a 15-month-old boy whose illness began upon weaning and separation from his family. The disease has a lower mortality when it occurs in children more than 3 years old. It occurs in boys more frequently than in girls, but it has an identical course. In this series, 1 out of 3 patients had a disease during the days or weeks preceding the occurrence of kwashiorkor. In 33% of these instances with a disease antecedent, the disease was measles. There was a curious absence of malaria symptoms. Clinically, epithelial symptomatology is the only nonequivocal type of indication. Three types of skin modifications are: (1) keratosic (hyperkeratosis, ulcerative or desquamative keratolysis), (2) decoloration or hyperpigmentation, and (3) sudoral disorder, which to the author's knowledge has not yet been noted by other investigators. This author believes that an indication of kwashiorkor may be a lack of perspiration on the face at mealtime; normal perspiration at meals may be a criterion of cure. Edema is one of the principal symptoms of kwashiorkor. There is an interstitial water retention which initiates the serious stage of the disease. Edema disappears, but may be replaced by a clinical dehydration with a grave prognosis. Sometimes at the beginning of developing malnutrition, there is a balance between ordinary episodic diarrhea and the appearance of edema. Other associated syndromes are (1) diarrhea, anorexia, and dehydration and (2) drying of the edema with hyperpigmentation and hyperkeratosis.

The ideal therapeutic agent would bring a balance between water loss and the reestablishment of anabolism. All too often disappearance of edema is followed by dehydration and weight loss. Corrective treatment of the hydration disorder leads from one extreme to the other, and yet the cellular processes of metabolic exchange are not restored. There are 3 stages of kwashiorkor: (1) reversible malnutrition, (2) progressive edematous malnutrition with decoloration, and (3) drying kwashiorkor with hyperkeratosis and hyperpigmentation. In this disease opposing processes succeed each other, and the practitioner in tropical regions is at a therapeutic impasse.

Frequency and Diagnostic Importance of the So-called "Minor" Manifestations of Rheumatic Disease in Children: A Clinical and Statistical Study of 206 Cases Observed at the Clinica Pediatrica of Florence, Italy, from 1947 to 1957. F. Ragazzini and S. Mori. Riv. clin. pediat. 61:105-125 (Aug.) 1958 (In Italian) [Florence, Italy].

Late or wrong diagnosis in children with rheumatic disease characterized by an atypical onset is still frequent despite the emphasis in the literature on the multiform manifestations of this disease. The authors report on 206 children (108 boys and 98 girls) who suffered from rheumatic disease for the first time and who were observed at the Clinica Pediatrica of Florence between 1947 and 1957. Most of the children (157) were between 6 and 11 years of age; only 36 were between 3 and 5 years of age. Morbidity was most frequent during the months of September (with 20 cases), October (with 25), and November (with 23) and was least frequent in August (with 12 cases). The family histories showed that rheumatic disease had been present in the parents of 12 children (5.8%) and in the brothers or sisters of 3 (1.4%); tuberculosis had afflicted members of the families of 11.7% of the children.

During the 12 months before manifestation of rheumatic disease, 48 children had suffered from sore throat, 13 had a disease of the respiratory tract, 7 had light fever, anorexia, or anemia, 5 had tuberculosis, 2 had scarlet fever, and 1 had a surgical trauma. The onset of the rheumatic disease was atypical in 49 children; 22 of them had painful abdominal symptoms, and because of these symptoms there was generally suspected a condition, such as appendicitis, requiring surgery. Fever, however, had preceded the abdominal pain, and vomiting was rare or absent. Fever was the first symptom in 21 of the 49 atypical cases, and in some children it was associated with sore throat. The authors stress the importance of a "precautionary" antirheumatic treatment in children who present fever and an undecided clinical picture and in whom an atypical rheumatic disease is suspected.

Primary Aldosteronism in a 9-Year-Old Child. N. Kretchmer, A. Dickinson, H. McNamara and R. Karl. Pediatrics 23:1115-1124 (June) 1959 [Springfield, Ill.].

The authors present the history of a 9-year-old boy with primary aldosteronism resulting from bilateral adrenal hyperplasia. The patient, a well-developed, well-nourished, prepubescent boy, was admitted to the New York Hospital-Cornell Medical Center in October, 1956, for evaluation of hypertension. Blood pressure in both upper and lower extremities was 200/150 mm. Hg. Polydipsia and polyuria were also present. The patient had a persistent hypokalemia and an elevated carbon dioxide content in the serum, although the pH was within normal limits. These findings were consistent with a diagnosis of primary aldosteronism. Aldosterone excretion in the urine was found to be significantly elevated above the normal values, whereas the values for 17-ketosteroids and 17-hydroxysteroids were normal. The patient was placed on a controlled sodium and potassium intake, and a daily balance of these electrolytes was determined. Four days after the diet was instituted, he was given 25 mg. of cortisone every 12 hours, which caused an increased negative potassium balance and, paradoxically, a negative sodium balance. The negative balance resulted from increased urinary excretion of both ions.

The diagnosis of primary aldosteronism was sufficiently established, and transabdominal adrenal exploration was performed in December, 1956. The left adrenal gland was larger and grossly more abnormal and was removed in entirety. Histological examination of the left adrenal gland showed hyperplasia of the zona fasciculata. A biopsy specimen taken from the left renal cortex showed evidence of an inflammatory process and some fibrosis. Pathological diagnosis was chronic pyelonephritis. The patient's preoperative status had not changed except for a mild decrease in polyuria and polydipsia, but urinary excretion of aldosterone, although decreased, was still elevated above normal. All the evidence indicated that the patient had bilateral adrenal hyperplasia. After considerable deliberation a subtotal adrenalectomy was performed. The immediate postoperative course was complicated by an elevation of blood pressure and by a diuresis for the first 72 hours. Thereafter both decreased to normal values. Maintenance adrenal steroid therapy, initiated just prior to surgery, was discontinued on the 5th day after operation, and the patient was fully ambulatory by the 8th postoperative day.

The patient was discharged from the hospital toward the end of March, 1957, with an average blood pressure of 135/90 mm. Hg. Most of the laboratory data were within normal ranges, but renal function had not improved since the preoperative evaluation. Because only a subtotal adrenalectomy was performed, the patient has been leading a completely normal life; he has not needed any medication and has been free of the dangers attendant to adrenal insufficiency. From all the evidence presented, it is reasonable to conclude that there had been hypersecretion of aldosterone by the adrenal glands of this boy since early infancy. Primary aldosteronism should be considered in every child admitted to the hospital with a diagnosis of essential hypertension, inasmuch as the latter condition when due to primary aldosteronism is a curable disease.

Aldosteronism and Hypertension: The Influence of Complete Adrenalectomy Upon Essential Hypertension in a Child. R. J. Slater, D. W. Geiger, J. Leeson and A. G. Gornall. Pediatrics 23:1125-1135 (June) 1959 [Springfield, Ill.].

The favorable influence of complete adrenalectomy on a 5-year-old boy with severe essential hypertension and cardiac failure is described by the authors. Repeated investigations failed to clarify the etiology of the hypertension. After extensive trials of medical management, including low intake of salt and administration of hypotensive drugs, only a moderate decrease in blood pressure was achieved, and the clinical response was unsatisfactory. Since increased excretion of aldosterone and a sensitive hypotensive response to salt restriction implicated disordered adrenal function, a two-stage adrenalectomy was done. The final achievement has been a marked improvement in cardiovascular status and reversal of impaired renal clearances. The condition of the boy has been maintained with cortisone and 9-alpha-fluorohydrocortisone. Despite these preliminary favorable results, emphasis is directed to the extreme caution which must attend the decision to undertake such a procedure.

Ceroid Storage Disease in Childhood. E. H. Oppenheimer and E. C. Andrews, Jr. Pediatrics 23:1091-1102 (June) 1959 [Springfield, Ill.].

The authors report the history of a 4-year-old boy and a 2-year-old girl, in both of whom the intracellular material found in the tissues at autopsy fulfills the present histochemical criteria for ceroid storage. In both patients there was a long history of nutritional disturbance; the children had developed poorly, and the girl presented severe mental retardation. The boy demonstrated a history of rickets, but demineralization of the bones was noted one year before death. Examination at autopsy revealed that the ribs were greatly distorted by both scurvy and rickets. Probable metastatic calcification was also noted in an artery adjacent to the thymus. Biopsy of the liver at 3 years of age revealed early cirrhosis with slight deposition of ceroid in the scars. There was a history of transfusions at one year of age, presenting an opportunity for the development of serum hepatitis, but there was no widespread loss of liver parenchyma in the biopsy section, such as is seen with characteristic postnecrotic cirrhosis. Autopsy revealed a progressed cirrhosis associated with greater numbers of ceroid-containing macrophages and central necrosis. The autopsy findings indicated that death was due to hepatic insufficiency with jaundice, ascites, edema, gynecomastia, and purpura, in addition to a marked electrolyte disturbance after protracted diarrhea.

Although the immediate cause of death in the girl was pneumonia, there was marked malnutrition and early cirrhosis of the liver. Ceroid was found mostly in macrophages in the cirrhotic liver. Jaundice occurred at the age of one month, which may have contributed to the production of the cirrhosis. No evidence of avitaminosis—no rickets, scurvy, or indication of deficiency of vitamin A or vitamin E—was found at autopsy, nor was any lipid found in the liver parenchyma, which could be attributed to a disorder of liver metabolism. Mental retardation was noted clinically, but no pathological changes could be recognized in the central nervous system. Although ceroid was present in macrophages in both of these cases, there is not enough evidence to indicate that it represented the same disease entity. In the boy the storage of ceroid appeared to be "primary," although associated with severe nutritional disturbance, whereas in the girl the presence of ceroid-containing macrophages in scar tissue might well have been a minor secondary finding in association with the cirrhosis.

DERMATOLOGY

Extensive Tuberculous Lupus After BCG Vaccination. S. Boulle, J. Civatte and M. Boulle. Presse méd. 67:606-609. (March 25) 1959 (In French) [Paris].

A report is given of an extensive tuberculous lupus which developed on a child's shoulder after BCG vaccination by scarifications on the same site. There was also a fistulous adenopathy of the left armpit. Arguments based on histological study are given; these are in favor of the tuberculous nature and BCG origin of the lupus. Emphasis has been put on the particular virulence of the vaccine and on a previously unknown allergic sensitivity to tuberculosis. In this patient the skin became progressively sensitized during development of the true inoculation lesion produced by the vaccine. The contact of BCG with this skin, or with allergic skin, gave rise to lupus transformation of the inoculated tissues. This rare outcome is a particular etiological form of the relatively common development of the spontaneous inoculation lesion of Koch's bacillus. In the patient described, lupus was observed at the age of 4 years in the region where BCG vaccination was performed at the age of 7 months.

Calcinosis in Dermatomyositis: Observations on Course of Disease in Children and Adults. S. A. Muller, R. K. Winkelmann and L. A. Brunsting. A. M. A. Arch. Dermat. 79:669-673 (June) 1959 [Chicago].

The records of 118 patients with dermatomyositis, who were seen at the Mayo Clinic from 1945 to 1955, were reviewed in an effort to determine the significance of calcinosis in dermatomyositis and to contrast its pattern of occurrence with that in scleroderma. Of the 118 patients, 87 were adults and 31 were children. The youngest patient was 18 months old, and the oldest was 71 years. The ratio of females to males was 3 to 1. All the patients were followed up for a minimum of one year. Among the 87 adult patients, 12 had calcinosis and 75 did not, while 17 of the 31 children had calcinosis and 14 were without calcinosis. Calcinosis was usually seen centered in the proximal muscles of the shoulder and pelvic girdles. All but 3 of the patients with calcinosis were females. This greatly increased incidence of calcinosis in females was similarly observed in patients with scleroderma. In several patients the amount of calcium increased steadily, usually over several months; thereafter no apparent increase occurred.

Episodes of ulceration with extrusion of calcified debris occurred periodically in several instances, particularly in children. Ulcerations were frequently associated with cellulitis and a severe systemic reaction. Episodes of extrusion of calcified debris occasionally were confused with exacerbations of the disease. Healing usually occurred spontaneously, but surgical removal of the calcified debris was sometimes necessary. In only one patient was the degree of calcinosis seen to decrease significantly after such episodes. Of the 29 patients with calcinosis, one patient, a child, died. Of the 89 patients without calcinosis, 33 died. This suggests that the occurrence of calcinosis is a good prognostic sign of survival.

Calcinosis did not develop among those who were less seriously affected and who had less severe disabilities. Of 11 adults who recovered completely, none had calcinosis. It should be emphasized that in the acute phase of the disease it is impossible to predict the course of the disease or the final extent of muscle involvement. Recurrent episodes of ulceration are a frequent manifestation of calcinosis in dermatomyositis and occur most commonly in the buttocks and the thighs. The pattern, course, and associated prognosis of calcinosis in dermatomyositis differ distinctly from those of calcinosis in scleroderma.

Eczema and Psoriasis Through Sensitization to Air-borne Allergens. E. Henocq and L. Guibert. Semaine hôp. Paris 35:1568-1570 (May 4) 1959 (In French) [Paris].

The allergic origin of eczema, whether the disease is the true or so-called diathetic eczema or a dermatitis due to an external cause, is generally admitted. The allergen responsible for diathetic eczema is often hard to identify. This form of eczema, which occurs in persons with hereditary allergic antecedents and which may begin in infancy, is often accompanied or followed by asthma or hay fever. Searching inquiry will usually reveal the rhythm of the attacks, the influence of the seasons, and the nature of the patient's living conditions, and may lead to the incrimination of bedding material, fungi. house dust, or the presence of an animal (dog or cat) in the house. Desensitization treatment often produces very favorable results in eczemas of this kind, in both children and adults.

Certain cases of eczema, apart from diathetic eczema and contact dermatitis, may be due to airborne allergens. This was illustrated in a patient in whom eczema of the hands appeared within 24 hours after she handled cultures of Mucor. Intradermal tests revealed elective sensitivity to this fungus, and specific desensitization treatment resulted in a rapid cure. Subsequent attacks due to Mucor and, eventually, to other fungi were relieved by further treatment, and specific desensitization to all the offending organisms put a stop to any new clinical manifestations.

The part played by air-borne allergens in the causation of certain eczemas, together with various other considerations, led the authors to investigate the possibility of an allergic origin for psoriasis. The results proved conclusively that many patients with psoriasis react favorably to specific desensitization to these allergens. Patients with psoriasis usually have a certain neurovegetative instability, sometimes even presenting forms of anxiety, obsession, or depression, so that the disease is often called psychosomatic. It is, of course, difficult to decide whether the psychological disturbances of the psoriatic patient are the result of his skin disease or its determining cause. Asthma, too, often has a psychosomatic component, but no one underestimates the importance of the allergic factor in its causation or denies that patients with asthma may be helped by specific desensitization treatment.

Allergy probably does not provide a complete explanation for psoriasis, but the proportion of patients in the authors' series of 60 whose condition has been cured or improved is too large for coincidence. More than 50 instances of sensitivity to air-borne allergens (of which fungi and dust were the most frequent) were found in the 60 patients, and interrogation revealed that familial or personal allergic antecedents were present in 40% of the 60. Patients with psoriasis should be systematically investigated for allergy, and those with positive skin reactions should be given specific desensitization treatment before any other therapy is tried.

An Evaluation of a New Cerumenolytic Agent. J. Q. Gant Jr. A. M. A. Arch. Dermat. 79:651-653 (June) 1959 [Chicago].

The author reports on 163 patients (children and adults) with excessive deposits of earwax who were treated with Cerumenex (triethanolamine polypeptide oleate-condensate in propylene glycol with chlorobutanol), a new ceruminolytic agent. In 87.1% of the patients there was superior removal of the earwax; in 11.0% there was satisfactory removal; and in only 1.9% was there failure to improve the condition. There were no untoward side-effects noted in any patients. Ten patients tested for sensitivity over a period of 6 weeks showed no sign of irritation or allergic reaction. The results of this clinical study show that Cerumene is an unusually effective and safe ceruminolytic agent.

Smoking, Necrobiosis Lipoidica, Granulomatosis Disciformis Chronica Progressiva. E. J. Ringrose. A. M. A. Arch. Dermat. 79:635-640 (June) 1959 [Chicago].

The author presents the history of 7 women, their ages ranging from 24 to 64 years, who had necrobiosis lipoidica diabeticorum and granulomatosis disciformis chronica progressiva, which are one and the same condition. Six patients were nondiabetics, and one was a diabetic. All the patients revealed a long history of smoking and thus presented a common causative factor. This factor is believed to be responsible for the development of necrobiosis lipoidica diabeticorum, since histopathological changes seen in the tissue excised from lesions in these patients were explained on the basis of a chronic recurring ischemia of the vessel walls. Smoking subjects the person to the influence of nicotine which causes his blood vessels to undergo intermittent spasms and results in intermittent ischemia of the vessel walls themselves and of the tissues supplied by these vessels. This leads first to intimal swelling and subsequently to damage to all layers of the vessel. It appears that smoking of only a few cigarettes a day might be of considerable importance in persons who have high-grade constitutional or other vascular defects. Smoking is believed to aggravate necrobiosis lipoidica diabeticorum. It is suggested that smoking be strongly considered in the search for causative factors in disorders of unknown etiology in which vascular disturbances may play an important part.

UROLOGY

Adrenal Cysts: Review of the Literature and Report of Three Cases. G. A. Abeshouse, R. B. Goldstein and B. S. Abeshouse. J. Urol. 81:711-719 (June) 1959 [Baltimore].

The authors report on a 3-year-old boy and on 2 women, aged 19 and 42 years, with adrenal cysts for which the patients were operated on. Pathological examination of the operative specimen of the boy revealed a hemorrhagic cyst of adrenal origin, which contained old coagulated blood and serum with blood pigment adherent to the inner surface of the cyst wall. The cystic mass was removed with the right kidney to which it adhered. The adrenal cyst of the younger woman was of lymphangiomatous origin. A small portion of the left adrenal was removed with the cyst. Calcification was present in the walls of the cyst. Examination of the operative specimen of the second woman revealed a solitary serous cyst of the right adrenal gland of lymphatic origin. The contents of the cyst were composed of a thick, clear, gelatinous fluid. Recovery was uneventful in all 3 patients.

One hundred fifty-two cases of adrenal cysts were collected from the literature. The diagnosis was established by autopsy in 88 and by surgical intervention in 64. Adrenal cysts are rare clinical and pathological lesions which may occur at any age but are more commonly observed in patients in the 5th and 6th decades. They are observed more commonly in female than in male patients in the ratio of 3 to 1. Adrenal cysts are usually unilateral and show no special predilection for either kidney. The commonest variety of adrenal cyst is the pseudocyst which may originate in a hematoma in or around the adrenal or in an area of hemorrhage and necrosis within a benign or malignant adrenal tumor. The second commonest variety is the lymphangiomatosus (serous) cyst resulting from lymphangiectasis. Many adrenal cysts are asymptomatic and are accidental findings at autopsy. The most prominent clinical features are dull pain in the adrenal area, gastrointestinal symptoms, and a palpable mass.

The diagnosis is usually made in suspected cases by properly selected roentgenologic studies, which include plain and lateral roentgenograms, excretory urography, retrograde pyelography, tomography, retroperitoneal air injection, and gastrointestinal studies. The presence of calcification in a cystic mass above the kidney is strongly suggestive of an adrenal cyst. The operation of choice is excision of the cyst with preservation of the ipsilateral kidney. The operative approach may be transperitoneal, lumbar (plain, excision of one or more ribs), or transthoracic.

Treatment of Peyronie's Disease with Potassium Para-Aminobenzoate (Potaba). C. J. D. Zarafonetis and T. M. Horrax. J. Urol. 81:770-772 (June) 1959 [Baltimore].

The authors report on 21 men, between the ages of 31 and 62 years, with induration of corpora cavernosa (Peyronie's disease), who were treated with potassium para-aminobenzoate (Potaba) administered orally in doses of 12 Gm. daily, divided into 6 doses of 2 Gm. each or into 4 doses of 3 Gm. each. The drug was usually given in the form of a chilled 10% aqueous solution or in 0.5-Gm. capsules. Treatment was continued for periods ranging from 3 months to 2 years. Before the institution of treatment, 16 of the 21 patients had pain upon erection. After treatment with Potaba, all reported that the pain disappeared completely. This was the earliest change to be noted, usually occurring within a few weeks after institution of the therapy. Marked penile deformity, that is deviation laterally or dorsally, or both, was present in 17 patients. After treatment, the deformity disappeared in 3, and 11 noted definite straightening of the penis on erection. A well-defined Peyronie's plaque was present in all 21 patients. With Potaba therapy it was observed that the plaque disappeared in 2 patients, diminished in size in 14, and so far remained unchanged in 5. Seven patients have now been off therapy for 6 to 12 months, and as yet have reported no recurrence of symptoms. The remaining patients are still on the treatment regimen. The reported observations appear to warrant further use of Potaba in the management of induration of corpora cavernosa.

Aerobacter Aerogenes Bacteremia and Bacilluria. H. Seneca. Surg. Gynec. & Obst. 108:733-739 (June) 1959 [Chicago].

The author cites reports indicating a striking increase in the frequency of Aerobacter aerogenes in urinary tract infections. Because of marked differences in resistance to treatment employing chemotherapeutic agents, it has become imperative to differentiate between infecting coliform organisms of the Escherichia coli and A. aerogenes groups early in treatment. Among 108 cases of bacilluria due to A. aerogenes, drug susceptibility studies indicated that A. aerogenes is a highly resistant organism, and that infections with this organism are very resistant to chemotherapy. The drug of choice is most often chloramphenicol or sulfadiazine; second choice is penicillin plus streptomycin or tetracycline; as a third choice, Gantrisin is employed. An occasional organism may be sensitive to Furadantin, erythromycin, or Matromycin.

During the 5-year period from 1952 to 1957, 10 cases of bacteremia due to A. aerogenes occurred among 74 cases of gram-negative rod bacteremias at the Columbia-Presbyterian Medical Center, New York. Four patients with A. aerogenes bacteremia recovered; 6 deaths occurred during the period between 1954 and 1957. Eight of 9 patients had had surgical intervention prior to bacteremia; in one case it was a terminal medical complication. No universally effective chemotherapeutic program was observed. The final clinical picture was one of renal failure.

Dysgenetic Gonadomas and Other Gonadal Neoplasms in Intersexes: Report of 5 Cases and Review of the Literature. M. M. Melicow and A. C. Uson. Cancer 12:552-572 (May-June) 1959 [Philadelphia].

The authors obtained from the files of the Squier urologic clinic of the Columbia-Presbyterian Medical Center, New York, the histories of 5 patients with somatosexual ambiguities, who had dysgenetic gonadal neoplasms. Reviewing the literature on the subject, they found that, to date, about 140 case reports of gonadal tumors in intersexes have been published. They feel that the incidence of such an association is probably greater than this number would indicate, and they list factors that might explain why more cases have not been reported.

From the cases presented and from the literature, the authors gained the impression that in patients with congenital somatosexual ambiguities there exists a tendency for the development of gonadal neoplasms. For this reason, it is desirable for such individuals to be examined before puberty, so that adequate biopsy specimens of their gonads can be obtained. These dysgenetic gonads may not be enlarged and yet may already be the seat of tumor. For these reasons, prophylactic or elective gonadectomy should be performed, when the patient reaches puberty. Children with the adrenogenital syndrome should be excluded from this procedure. An abdominal mass in any patient with a somatosexual ambiguity should suggest a gonadal neoplasm until proved otherwise. An acute condition within the abdomen in such patients should be interpreted as being the result of the twist of the pedicle of the gonadal growth.

The management of intersexes with gonadal tumors depends on the following conditions: pathological type and developmental stage of the underlying "growth," appearance of the external genitals, age and sex according to which the patient was reared, and presenting clinical syndrome (acute condition within the abdomen, sterility, inguinal hernia, etc.). It is hoped that awareness on the part of physicians as to the frequent association of neoplasms in dysgenetic gonads, and as to the importance of the use of newer diagnostic procedures (such as chromatin sex pattern determinations, hormonal bioassays, etc.), will result in achieving accurate diagnosis of "dysgenetic gonadomas" at an early stage of development. It would then be possible to accumulate sufficient data, which should aid in understanding the pathological nature of, and in arriving at a proper classification for, this bizarre group of gonadal tumors in intersexes.

Carcinoma of the Bladder: Sites of Metastases. T. R. Fetter, J. H. Bogaev, B. McCuskey and J. L. Seres. J. Urol. 81:746-748 (June) 1959 [Baltimore].

The authors present an analysis of 637 patients, between the ages of 20 and 93 years, who were admitted to the Jefferson Medical College Hospital in Philadelphia between January, 1940, and December, 1957, and in whom carcinoma of the bladder was found by surgical pathological study. Of the 637 patients, 490 (77%) were men, and 147 (23%) were women. The incidence of carcinoma of the bladder was highest among those between the ages of 61 and 70 years. In 55 consecutive postmortem examination carried out during the same period on patients with carcinoma of the bladder, metastases were noted in 39, an incidence of 71%. The lymph nodes were the most frequent site of metastasis. The lungs were the most commonly involved parenchymal structures. Metastasis to bone occurred in 37% of the cases, metastasis to the liver in 13%, and metastasis to the adrenal in 12%. This tendency to widespread metastasis requires diligent examination before undertaking extensive surgical procedures in the management of patients with carcinoma of the bladder. The age and sex distribution among the patients studied correlated well with other reports in the literature.

THERAPEUTICS

Salicylate Intoxication with Special Reference to the Development of Hypokalemia. E. D. Robin, R. P. Davis and S. B. Rees. Am. J. Med. 26:869-882 (June) 1959 [New York].

The authors report the case histories of 6 female patients, between the ages of 5 and 52 years, with severe salicylate intoxication, and they discuss the features of this disorder in the light of these cases. The intoxication resulted from the ingestion of about 25 to 50 Gm. of aspirin. The initial effect of salicylates on acid-base balance is the production of respiratory alkalosis. The respiratory alkalosis is due to a direct central effect of the salicylate, the ability of which to produce hyperventilation appears to be mediated by the anterior hypothalamus. One of the important results of this respiratory alkalosis is hypopotassemia. The latter is manifested by low serum potassium concentrations and electrocardiographic and neuromuscular changes. The persistence of hypopotassemia when alkalosis is no longer present indicates that potassium depletion is likewise present. The manifestations of hypopotassemia and potassium depletion may be reversed by adequate potassium therapy. Other consequences of the respiratory alkalosis may include tetany and interference with tissue oxygenation. Therapy for this phase of the disease consists of fluid replacement, potassium replacement, and administration of oxygen. The use of alkali and of respiratory center depressants is contraindicated.

In some patients with severe salicylate intoxication, metabolic acidosis may develop after the stage of respiratory alkalosis. The manifestations of the respiratory alkalosis and metabolic acidosis are so similar that frequent blood pH measurements are necessary to guide the therapy. This is particularly true because the disease may progress from one stage to the other without obvious change in the patient's status. The most important therapeutic agent for metabolic acidosis is the administration of sodium bicarbonate or lactate. Other important effects of salicylate intoxication include fever, hypoprothrombinemia, hemorrhagic gastritis, hypermetabolism, hypouricemia, renal failure, delirium, coma, and ultimately depression of the central nervous system. The prognosis of the adequately treated patient would appear to be good.

PATHOLOGY

Nonspecific Reactive Hepatitis in Aged and Infirm People. F. Schaffner and H. Popper. Am. J. Digest. Dis. 4:389-399 (May) 1959 [New York].

Liver biopsies were performed with a Terry aspiration biopsy needle on 94 persons who were patients in a county infirmary. None of these patients had any known hepatic or gastrointestinal disorder, and none had recently been given any drug known to cause hepatic injury. Their ages ranged from 35 to 92 years, with an average age of 63.9 years. The diagnosis in 73 of the 94 patients was either arteriosclerotic or hypertensive cardiovascular disease; of the remaining 21 patients, 12 had chronic bone or joint disorders, and 9 had various neurological disorders. Nonspecific reactive hepatitis in the 94 patients was characterized by a group of abnormal histological findings, including duct proliferation, portal and periportal inflammatory infiltration, focal necrosis, Kupffer-cell mobilization, and evidence of regeneration. No correlation with results of hepatic tests could be obtained, and these results were sometimes abnormal without any apparent reason. The use of such a group of patients for various studies in which hepatic structural and functional integrity is of importance must be preceded by control liver biopsies and by repeated and careful evaluation of hepatic function.

RADIOLOGY

The Volume of the Heart in Essential Hypertension: A Radiologic Study. S. Panichi, G. Muiesan and I. Bonechi. Minerva med. 50:1369-1373 (May 5) 1959 (In Italian) [Turin, Italy].

The volume of the heart was measured in 2 groups of patients with essential hypertension. The first group was composed of 50 women, 39 to 75 years of age. The volume of the heart was normal in 16 of these patients, slightly above normal in 21, and highly above normal in 10; the remaining 3 patients presented a marked cardiomegaly. All the patients with a volume of the heart above 600 cc. per square meter of body surface had had hypertension for more than 5 years; the patients with a volume of from 500 to 600 cc. per square meter had had hypertension for from 3 to 10 years; the remaining patients had had hypertension for from a few months to a few years. The second group was composed of 50 men, 36 to 72 years of age. The volume of the heart was normal in 15 of these patients, slightly above normal in 22, and highly above normal in 12; only one patient who had had hypertension for more than 10 years presented a marked cardiomegaly. Three patients who had suffered hypertension for 10 years or more presented values in which the volume of the heart was below 500 cc. per square meter of body surface.

The authors believe that an increase in the volume of the heart may be of help in determining the extent of the functional involvement of the heart. A comparison of the radiologic findings with the clinical, electrocardiographic, and blood findings showed that patients with values of the volume of the heart above normal presented only a simple hypertrophy of the left ventricle and that patients with values of the volume of the heart between 500 and 600 cc. per square meter presented a hypertrophy of the left ventricle combined with some dilatation of the heart, while patients with values above 600 cc. per square meter presented a ventricular hypertrophy with dilatation of the heart. The volume of the heart was normal in 31 patients, but the averages of the values present in these patients (402 cc. per square meter of body surface for the men and 394 cc. per square meter for the women) were higher than the normal averages which were, respectively, 374 and 356 cc. per square meter. The authors believe that some involvement of the heart, not otherwise ascertainable, was already present in these patients.

Mass Radiography and Cancer of the Lung. E. Posner, L. A. McDowell and K. W. Cross. Brit. M. J. 1:1213-1218 (May 9) 1959 [London].

During 1955, the last year for which national figures have been published, mass radiography units in England and Wales detected 1,482 cases of cancer of the lung and mediastinum. National morbidity figures for new cases of cancer of the lung are not available, but the 17,272 deaths from cancer of the lung during 1955 suggest that at present mass radiography does not find more than 10% of all new cases of cancer of the lung. Almost half of the above number were not detected by routine mass radiography, but at sessions for symptomatic cases referred by general practitioners, a type of service now widely employed by many such units. The authors review observations on 238 male patients in whom cancer of the lung was found by 6 mass radiography units of the Birmingham Regional Hospital Board in the 12 months following July 1, 1955, and whose fate had been traced by the Regional Cancer Registry after 12 months. In this report they are concerned chiefly with the comparison of the resectability rates among patients with lung cancers found by conventional routine mass radiography and among patients referred to the units by general practitioners.

The authors did not obtain a clear-cut answer to the question of the value of mass radiography in the detection of lung cancer. They are also aware that a follow-up period of 12 months is short, but the investigation is continuing. They found a higher resectability rate in cases found at routine surveys as compared with cases referred by general practitioners because of symptoms. The difference, however, was small and not statistically significant. In a number of cases the fate of the patient was governed by factors of age, histology, acceptance, or refusal of operation—factors which are little, or not at all, related to early diagnosis. The 12-month survival rate, irrespective of treatment, was higher for routine-survey patients than for general-practitioner patients. Lobectomy was performed on a larger proportion of patients with cancers detected by routine survey than on those referred by practitioners. Patients with symptoms were referred by general practitioners generally without undue delay, and the majority of resections were carried out within the first 2 months after x-ray examination. The small number of truly asymptomatic cases and the absence of small peripheral shadows in this series are discussed in their relation to future mass radiography policy. The installation of more 100-mm. x-ray units to deal with a larger number of general-practitioner referrals, particularly men in the critical age groups, is suggested.

Extensive Lumbar Meningocele Associated with Neurofibromatosis. B. P. Sammons and D. F. Thomas. Am. J. Roentgenol. 81:1021-1025 (June) 1959 [Springfield, Ill.].

The authors report a case of meningocele in the lumbar spine associated with neurofibromatosis in a 27-year-old sailor who was admitted to the United States Naval Hospital in St. Albans, N. Y., complaining of low-back pain of 10 days' duration. There was no history of any familial disease. Physical examination revealed numerous fine cutaneous nodules and small pigmented areas. Several soft nodules (1 to 2 cm. in size; molluscum fibrosum) were noted on the trunk and forehead. The results of the neurological examination were within normal limits. Hemogram, urinalysis, and spinal fluid chemistries and pressures were normal. Roentgenograms of the lumbosacral spine revealed deep scalloping of the posterior portion of the bodies of the 11th thoracic to the 4th lumbar vertebrae and marked thinning of the pedicles throughout this area. Iophendylate myelograms showed herniation of the meninges outside the confines of the vertebral canal. An intravenous pyelogram revealed lateral displacement and scalloping of the right ureter below the renal pelvis. The right ureter near the pelvis brim was displaced medially, and roentgenographic studies of the small intestine showed a *persistent extrinsic pressure defect on the ileum;* these changes were probably due to retroperitoneal and visceral neurofibromas respectively.

Twenty-nine cases of intrathoracic meningocele associated with neurofibromatosis were collected from the literature, but none was reported before in the lumbar spine and primarily intravertebral in location. A mesodermal origin for the combination of meningocele and neurofibromatosis has been suggested by the occurrence of thoracic meningoceles with neurofibromatosis. The case of the sailor with lumbar meningocele associated with neurofibromatosis further supports the concept of a lack of specificity for the thoracic spine.

BIOCHEMISTRY

Possible Sites of Macroglobulin Synthesis: A Study Made with Fluorescent Antibody. C. C. Curtain and J. F. O'Dea. Australasian Ann. Med. 8:143-150 (May) 1959 [Sydney, Australia].

According to the authors, it was Waldenström who in 1948 first used the term "macroglobulin" to describe proteins in human serum having molecular weights of over 1 million. In his cases these proteins were associated with a clinical syndrome characterized by lethargy, bleeding tendency, hemorrhagic purpura, and enlargement of the liver, spleen, and lymph nodes. In smaller amounts, macroglobulins have been found associated with lymphosarcoma and, very rarely, with myeloma. This paper describes experiments on the localization of macroglobulins by the fluorescent antibody technique in the tissues of 2 patients, one showing Mikulicz's syndrome (chronic enlargement of the lacrimal and salivary glands) and the other having myeloma. The serums of both patients contained considerable amounts of macroglobulin, although neither showed the clinical signs associated with macroglobulinemia of Waldenström.

The first patient had macroglobulin in large quantities in mature and immature plasma cells in the bone marrow. It was considered that the macroglobulin was the product of a plasmacytosis reactive to the pathological process in the patient's parotid gland. The second patient had both a macroglobulin and a myeloma globulin in his serum. The fluorescent antibody studies suggested that these 2 abnormal proteins originated in different plasma cells in the bone marrow, which were, however, morphologically identical with orthodox staining. Neither protein could be demonstrated in frozen sections of other tissues obtained at autopsy.

Zinc Metabolism in Hepatic Dysfunction. B. L. Vallee, W. E. C. Wacker, A. F. Bartholomay and F. L. Hoch. Ann. Int. Med. 50:1077-1091 (May) 1959 [Lancaster, Pa.].

Recent investigations have demonstrated the presence of zinc in several dehydrogenases and in pancreatic carboxypeptidase. Two of these enzymes, alcohol dehydrogenase and glutamic dehydrogenase, are isolated from mammalian liver. Zinc is an active enzymatic site in these enzymes, and its presence is indispensable to their activity. Zinc is thus involved in the oxidation of ethanol, a substance that is considered to have a primary role in the development of some forms of Laennec's cirrhosis, and in the faulty metabolism of ammonia in patients with cirrhosis. These circumstances suggested an investigation of the metabolism of this metal in patients with liver disease. For the description of procedures for the analysis of zinc and the cleaning of glassware and containers the authors refer to earlier reports. De-ionized water was used throughout. Duplicate zinc analyses were performed on serum from venous blood, obtained from normal persons and from patients (both male and female) with Laennec's cirrhosis. Zinc was extracted also from 24-hour urine specimens of normal men and of men with postalcoholic cirrhosis. Zinc, copper, and all other metals present were determined by chemical or spectrographic method, or both, in liver samples obtained at autopsy from patients with Laennec's cirrhosis and from subjects without evidence of liver disease.

The data obtained indicated that the serum zinc concentration is decreased in Laennec's cirrhosis. In patients with postalcoholic cirrhosis, zinc concentrations in serum and in the liver tissue are markedly lowered. Simultaneously, these patients excrete abnormally large quantities of zinc in their urine; a patient in the terminal state of this disease, however, excreted abnormally low quantities of zinc. The administration of zinc sulfate in physiological quantities tends to restore normal excretory patterns. The Bromsulphalein retention in 5 patients with postalcoholic cirrhosis tended toward normal in the course of these investigations on zinc metabolism. The data are interpreted in the light of the comparative biochemistry of zinc and ethanol metabolism. A conditioned zinc deficiency is conjectured to be consistent with the present data and the known historical, pathophysiological, and pathochemical knowledge of this disease.

Diabetic Coma Without Ketosis. P. Lexow. Acta med. scandinav. 163:115-119 (no. 2) 1959 (In English) [Stockholm].

Occasionally patients with diabetic coma are seen in whom the urine contains no ketone bodies. Reduced kidney function is generally regarded as the cause of this condition, the acidosis being the result of accumulation of ketones in the blood. The author presents the history of 3 patients with diabetic coma and without ketones in the urine; these patients were among about 7,700 persons on whom autopsies were carried out since 1940. All 3 patients were elderly, ranging in age from 61 to 79 years, and 2 of them were known diabetics. There was a gradual development of coma. The blood pressure fell to 90 systolic or below. The blood sugar ranged from 359 mg. per 100 cc. to 1,300 mg. per 100 cc. In 2 cases the urine sugar concentration was approximately 4 times higher than the blood sugar. Reactions for ketones in the urine were entirely negative. All the patients had proteinuria; the level of blood urea was elevated; the alkali reserve was moderately reduced; but none of the patients were anuric. Death occurred from 16 to 10½ hours after the patients became completely comatose.

The author feels that the findings cannot be explained by the old theory of renal retention of ketones. As long as the blood sugar is very high, there is little tendency to ketone formation in the liver. During shock the liver functions are known to be reduced by hypoxia, and the ketogenesis in the liver may be impaired. The acidosis in these cases is considered to be caused by accumulation of lactic acid from anaerobic breakdown of carbohydrates known to take place in shock. The increased resistance to insulin in shock seems to be a result of both stress reaction and depression of the liver functions. The theory is advanced that diabetic coma without ketosis is due to hepatocellular failure during shock. It is impossible to prove morphologically that the lack of ketones is due to hepatic failure during shock. Hepatocellular failure is a functional concept rather than an anatomic one. Accordingly it is of great interest to obtain biochemical determinations of total ketones (including beta-hydroxybutyric acid) and lactic acid in the blood before death in similar cases of diabetic coma.

PUBLIC HEALTH

Comparison of the Number of Breast-Cancer Deaths Observed in Relatives of Breast-Cancer Patients, and the Number Expected on the Basis of Mortality Rates. M. T. Macklin. J. Nat. Cancer Inst. 22:927-951 (May) 1959 [Washington, D. C.].

The author studied sample populations from the State of Ohio to answer the question of whether or not breast cancer in the human being has a genetic basis. The material was collected from June, 1946, through 1952. It was found that grandmothers, mothers, aunts, and sisters of women with breast cancer had breast cancer with a frequency which was significantly greater than that of women in a similar age range, either in the general population or in 2 sets of selected control samples. This excess cannot be entirely environmental in origin, since it was found almost to the same extent in both paternal and maternal grandmothers and aunts. It cannot be attributed to biased selection or to chance distribution of the trait through the population, since the excess was significantly greater than could be accounted for by either of the above factors. Better recall by women with breast cancer, whose relatives were similarly affected, has no bearing on this excess, since the entire family of both control and breast-cancer samples was thoroughly investigated. The ratio of observed-to-expected number of breast cancers is higher in unmarried than in married aunts and sisters. The fact that the presumably genetic factor responsible for this excess of breast cancer is enhanced to the greatest degree in childless women shows the interaction of genetic and extrinsic factors.

Vaccination with V. D. S. Vaccine (Diffusing Vaccine Salvioli) in Dispensaries. S. Taronna. Minerva med. 50:1073-1077 (April 14) 1959 (In Italian) [Turin, Italy].

The author reports on 15,174 children who had been vaccinated in infancy or early childhood against tuberculosis in public dispensaries in Venice, Italy, between 1953 and 1958; the vaccine used was made from killed tubercle bacilli and was known as diffusing vaccine Salvioli (V. D. S.). The children were followed up throughout the school years. Approximately one-half of them (7,492) came from families in which one or more members had tuberculosis during the period of the vaccination program. The tuberculous disease developed in 53 children (0.7%) who were exposed to the active disease at home and in 11 children

(0.14%) for whom there was no evidence of exposure to an active disease at home. The 64 children who were ill had only the first 2 forms of the primary phase of the disease, consisting of simple or allergic varieties of adenopathy or erythema nodosum or allergic pleurisy. A girl, whose father had the tuberculous disease, contracted tuberculous meningitis 2 years after vaccination and died of it. The vaccinal nodule had never developed in this child, and her tuberculin tests had always been negative. This case confirms the assertion of Salvioli that appearance of the vaccinal nodule is a necessary condition for the vaccine to become effective.

These results are compared with the clinical history of 2,908 children who received medical assistance in the same Venetian dispensaries from 1947 to 1953, that is during the years which preceded the vaccination period. Of 2,086 children who were exposed to active tuberculosis at home, 1,122 (53.79%) contracted the disease. Of 822 children who were only slightly, or were not at all, exposed to tuberculosis at home, 385 (46.83%) contracted the disease. In the unvaccinated group the first 2 forms of the primary phase of tuberculosis developed in 1,439 children, a pulmonary or extrapulmonary form of the disease in 55, and a meningeal tuberculous process in 13. No severe general or topical side-effects took place in any of the vaccinated children. Vaccination with V. D. S. vaccine has thus in this series proved to be an effective and harmless means for the prophylaxis of tuberculosis.

General and Socioeconomic Aspects of Pulmonary Tuberculosis as an Epidemiologic Problem. E. Hain. Tuberkulosearzt 13:305-325 (May) 1959 (In German) [Stuttgart, Germany].

Tuberculosis of the lungs is still a major economic and epidemiologic problem despite the considerable reduction in the morbidity and mortality of the disease in the last years. The higher morbidity and the greater incidence of relapses in men are probably attributable to socioeconomic factors (unwillingness to undergo prolonged treatment or to change the type of work because it would involve a loss of income or a descent in the social scale). Although in the population, as a whole, tuberculosis of the lungs takes second place to cardiovascular and unspecific lung diseases as a cause of permanent disablement, it is the commonest cause of invalidism in the younger age groups. This, together with the fact that the disease has a considerably better prognosis than, for example, arthritis or the cardiovascular diseases, renders the rehabilitation of tuberculous patients, particularly those in the younger age group, a matter of the greatest importance.

Tuberculosis has very serious economic effects, not so much because of the expenses involved in the treatment of, and the payment to the tuberculous patient, but because of the considerable loss of man power. For the German Federal Republic the total economic loss caused by the disease has been estimated to amount to 1,000 to 1,500 million German marks, a sum big enough to warrant considerable expenditure for the prevention of the disease and the rehabilitation of the tuberculous patient. Between the fully recovered patients who have returned to their former jobs and the completely disabled persons there is a large group—estimated in the German and English medical literature at from 10 to 35% of all cases of tuberculosis—in which rehabilitation and resettlement are possible. The number of these cases has been estimated at 11,000 for the German Federal Republic.

An Epidemic of Diphtheria in the City and Province of Verona, Italy. P. Montenovesi. Fracastoro 52: 119-130 (March-April) 1959 (In Italian) [Verona, Italy].

The author reports on a clinical and statistical study on the epidemic of diphtheria which struck the city and province of Verona, Italy in October, 1953, and lasted until January, 1955. A total of 671 cases were reported, 463 of the patients being hospitalized. Normally about 100 to 150 cases of diphtheria are reported every year in the same area. Two hundred fifty-nine (55.9%) of the 463 patients who were hospitalized were male, and 204 (44.1%) were female. Of those patients above 2 years of age, 60% were between 2 and 10 years of age, 9.9% were between 10 and 15 years, and 16.1% were over 15 years. The epidemic was more severe during the autumn and winter months. Most of the patients (52.5%) presented pharyngeal diphtheria; 37.8%, rhinitis; 5.6% laryngeal diphtheria; and 1.7%, other forms of diphtheria. Forty-five patients (9.7%) suffered complications involving the kidney; 42 (8.6%), complications involving the nervous system; and 60 (12.9%), complications involving the heart. Eleven (2.3%) patients died; 2 were infants, and 9 were between 2 and 8 years of age; 6 of these patients had suffered a nasopharyngeal localization of the disease. Postmortem examination showed that the immediate cause of death in 8 of the 11 patients who died was a myocardial lesion. Two hundred forty patients (53.5%) had not been vaccinated against diphtheria; the 215 patients who had been vaccinated had received only 2 injections of diphtheric anatoxin, and only 19 of the 215 had received a booster dose. Eight of the 11 deaths occurred among nonvaccinated persons. All the 19 patients who had received a booster dose suffered rhinitis with no complications.

The author believes that from the epidemiologic point of view the episode he studied is to be considered as a periodic recrudescence of diphtheria in a region where diphtheria is endemic. He could not ascertain the cause that provoked the outbreak of this epidemic.

BOOK REVIEWS

The Clinical Evaluation of New Drugs. By fourteen authors. Edited by S. O. Waife, M.D., F.A.C.P., and Alvin P. Shapiro, M.D. Cloth. $7.50. Pp. 223. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1959.

This collaborative work by highly respected authorities in the field presents a survey of the problems and pitfalls involved in the evaluation of a new drug, from its initial study in animals, through clinical trials, until its introduction into general medical practice. The emphasis is on investigation in human patients. The wide range of topics covered includes not only such technical subjects as experimental design and statistical analysis but also the delicate question of the ethics of experimentation on human beings. It is an excellent guidebook "for the many who participate in the search for and evaluation of better and safer drugs to treat human disease." It should prove helpful not only to the investigator but also to the practicing physician whose primary interest is in appraising published reports of drug evaluation and in distinguishing the well-planned and competently executed experiment, on which valid conclusions can be based, from the poor study that permits of no conclusion. The book should be required reading for every student of pharmacology or medicine.

An astonishing number of the reports of clinical trials of drugs published in the current medical literature present nothing more than vague impressions and are better described as testimonials than as scientific papers. Too many give evidence of a lack of appreciation of the rudiments of experimental design, the need for comparison of a new agent with older similar drugs or with placebos, and of the value and limitations of statistical analysis. Frequently, too, there is neglect of the important fact that many diseases are self-limited and that recovery may occur without treatment, the result being that circumstantial improvement is uncritically ascribed to the drug under investigation. Among the many other sources of confusion are the effects of the physician-patient relationship; unconscious bias on the part of the investigator, patient, or ward personnel; and the effects of bed rest, hospital environment, or, in some instances, the physiological effects of sleep. Careful reading of the present volume should enable the untrained investigator to avoid these, as well as less elementary, errors.

The evaluation of new drugs, which are being introduced at an ever-increasing rate, poses a formidable challenge to the physician interested in rational therapy. The difficulty lies in selecting, from the many introduced, those few drugs which are superior to well-established agents or are distinctly different from other drugs in their pharmacological or therapeutic actions. The fact that each new drug, as it appears, seems to gather enthusiastic support for a time, only to be displaced in favor after a brief period by a still newer arrival, hampers dispassionate appraisal. Glowing praise, extravagant claims, and the bombardment by promotional literature to which the physician is subjected further add to the confusion. This book admirably achieves its expressed aim of presenting "a standard against which the practitioner . . . can judge critically the reports of drug research to which he is continually exposed."

Some readers may feel that more detail and fuller treatment of some of the topics would be desirable; however, each chapter is followed by an excellent bibliography. The index is rather sketchy, and consequently information on individual drugs or groups of drugs, scattered through various chapters, may be difficult to find. However, these are minor flaws in a splendid and unique book, one that deserves a place in the library of every physician and medical scientist.

Symposia on Child and Juvenile Delinquency Presented at the American Orthopsychiatric Association. Chaired and edited by Benjamin Karpman, M.D., Chief Psychotherapist, St. Elizabeths Hospital, Washington, D. C. Cloth. $10. Pp. 364, with illustrations by Wesley R. Wilken, Psychodynamics Monograph Series, Station L, Washington, D. C., 1959.

The editor of this volume was chairman of each of the five symposiums whose topics included a general discussion of the psychopathic, delinquent child; his behavior; a differential diagnosis of psychopathy; and the psychodynamics and basic emotional factors of delinquency. This book is a good source of contemporary thinking on the subject. Although the participants presented broadly varied opinions, it was generally accepted that true psychopathy in the child is relatively rare. Most patients presenting antisocial behavior are neurotic delinquents.

A number of etiological factors were suggested. Constitutional inferiority was mentioned by only one contributor but questioned by others. Two patients with psychopathic behavior in whom endocrine dysfunction, namely gonadal imbalance, was present were said to have improved after

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These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

hormonal treatment. A delay in language development was thought to be a contributing factor in preventing adequate communication with others. The chief etiological factor was considered to lie in inadequate parent-child relationships in the earliest period in life. Children who are raised in institutions without sufficient mothering or those confronted with inconsistent maternal attitudes, may express psychopathic behavior due to a lack of ego development. The critical age for ego development seems to be the first two years of life. Socioeconomic factors or identification with a weak parent or with a delinquent group also may result in psychopathic behavior.

The pathology of psychopathy lies within the ego. A weak ego cannot develop strong affective relationships and results in shallowness of thinking and judgment. Behavioral characteristics of delinquent children include poorly controlled, aggressive, and destructive behavior. Almost all of them show evidence of hostility and project this on others in the environment. Lack of superego control prevents these children from experiencing anxiety as they engage in antisocial behavior. There is no well-defined manner of predicting future delinquency in infants. Children below the age of 7 years may be considered to present predelinquent behavior patterns. The latter can be treated differently from the same patterns in older children.

The development of a close relationship with a therapist may produce changes as the therapist gradually succeeds in setting limits for the patient. Ego development is the essential goal. Constructive changes in the environment are also necessary. Patients one or both of whose parents have also entered psychotherapy seem to have a better prognosis than do the others. It is generally conceded that the older delinquent may not be able to benefit from individual psychotherapy. Placement in an understanding environment that affords consistent limitations seems to offer the best prognosis. While treatment has been touched on in this book, a symposium devoted solely to therapy should prove most fruitful. The various discussions have produced many questions; one of these—why a single member of a family becomes delinquent—remains unanswered.

Shakespeare and Medicine. By R. R. Simpson, M.B., Ch.B., F.R.C.S. Boards. $6. Pp. 267, with illustrations. Williams & Wilkins Company, 428 E. Preston St., Baltimore 2; E & S Livingstone, Ltd., 16 & 17 Teviot Pl., Edinburgh 1, Scotland, 1959.

This is a fascinating volume. It appears that of the hundreds of so-called authoritative books on Shakespeare only one has dealt with the medical aspects of his writings. That book was written by Dr. John Bucknill and published in 1860. The numerous papers and essays on the subject that followed were based more or less on the information contained in his scholarly book. Simpson, in the present work, cites some 450 major medical references from the plays and poems of Shakespeare. This number, however, does not exhaust the list for, if minor references are included, the list contains over 700 medical references. To illustrate the medical aspects of the plays of the great bard, Simpson presents an analysis of "Romeo and Juliet" and (in another chapter) a study of Falstaff. A further interesting discussion of some of the medical problems raised in the tragedies is presented in a separate chapter.

Shakespeare's versatility is such that no one book could exhaust even this minor aspect of his creative genius. The present small volume is a worthwhile addition to our understanding of the great English poet. It should prove of great interest to all lovers of literature and particularly to doctors of medicine.

Bleeding Esophageal Varices, Portal Hypertension. By Hirsch Robert Liebowitz, B.S., M.D., Assistant Professor Clinical Medicine, New York University College of Medicine, New York. Section on surgical treatment in collaboration with Louis M. Rousselot, M.D., M.S., Med.Sc.D., Director of Surgery, St. Vincent's Hospital, New York. With foreword by Allen O. Whipple, M.D., F.A.C.S. Cloth. $24.50. Pp. 986, with 179 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1959.

This book had its beginnings in 1950 with a collection of 50 cases of ruptured varices proved at autopsy. The main author began an inquiry into the clinical and pathological features of portal varices and the natural history of patients with bleeding varices. As a result he has reviewed a tremendous amount of literature relating to the circulatory dynamics of the portal system, which review occupies the first third of the book. Extensive references are attached to each chapter. Many of the factors concerned with the pathogenesis of portal hypertension and esophageal varices are incorporated in later chapters dealing with clinical problems. Some of these chapters are followed by summaries while others are not. Dispersed throughout the book are case reports contributed by and based on the experience of both authors and critical reviews of other cases reported in the literature.

Dr. Liebowitz concludes that increased hydrostatic pressure is the fundamental mechanism of varix rupture, regardless of the state of the overlying mucosa. Discussions follow concerning hepatic portal cerebral encephalopathy, ascites, the diagnosis of esophageal varices, splenic portography, and medical management of bleeding varices. The combined pressure and signal apparatus designed by Kulick and Rousselot is analyzed. The concluding section of the book concerns itself with the discussion of surgical management of portal hypertension and the use of portacaval shunt. However, no definite stand is taken on the controversial topic of the emergency portacaval shunt. Although this volume represents a monumental contribution in terms of a review of the pertinent literature, the book suffers from a lack of conciseness. As noted in the foreword "this large monograph deserves careful reading, and will be most rewarding to anyone who has had to deal with the problems associated with portal bed block and portal hypertension." Unfortunately, the size of the monograph may deter some prospective readers.

The Degenerative Back and Its Differential Diagnosis. By P. R. M. J. Hanraets, M.D. Translation by Miss M. E. Hollander. [*Thesis, M.D., Roman Catholic University at Nijmegen.* Title: The Weak Back: A Medical Study of the Endogenous Components of Disorders of the Back, Which is Then Called: A Degenerative Back.] Cloth. $19.95. Pp. 690, with 315 illustrations, photographs by W. Maschhaupt, drawings by P. v. d. Maaden. Elsevier Press, Inc., Bank of Southwest Building, Houston 2, Texas; Elsevier Publishing Company, 110 Spuistraat Amsterdam C, Netherlands; D. Van Nostrand Company, Ltd., 358 Kensington High St., London, W. 14, England; D. Van Nostrand Company (Canada), Ltd., 25 Hollinger Rd., Toronto 16, Canada, 1959.

This extensive volume is interesting but difficult to read, because the style is often confusing. This is mentioned to emphasize the fact that this is not a book to be hastily read but rather to be carefully and slowly digested, chapter by chapter. The whole volume deals with degenerative lesions in the back; early in the book, the author states that, although most of the backs he sees have degenerative lesions, the patients should not be told this. The reason for this approach is not clear.

The first few chapters are general in nature and deal with the causes of the multiple degenerative changes that may appear in the spine, including those of the bony structures, changes in the mineral content of bone, facet changes, changes within the disk, and changes in the associated muscles, blood vessels, and nerves. Several excellent colored photographs show many of the anomalies in the nerve roots which, the author feels, definitely contribute to the degenerative lesions. He also states that degenerative back lesions may be a manifestation of a certain type of personality structure and that psychic disturbances can precipitate or aggravate this condition.

As to treatment, the author favors two operations. The first is complete laminectomy combined with extensive foraminotomy. The explanation given is that the laminas do not enter into the stability of the spine and therefore can be sacrificed and that the chief area where the nerve root is likely to be constricted is at the foramen. These two points are debatable. The second operation is the selective extradural rhizotomy of the nerve root for the relief of pain. He admits that this is a difficult procedure. The third and probably the most radical idea presented is the "overhaul operation" in which many levels are explored at one time. This book is very interesting but likely to provoke much discussion. It is difficult to accept all of the author's views. It should prove interesting chiefly for those who frequently must treat the degenerative back but is far too complex to be given to students as assigned reading.

Transplantation of Tissues: Skin, Cornea, Fat, Nerves, Teeth, Blood Vessels, Endocrine Glands, Organs, Peritoneum, Cancer Cells. Volume II. Edited by Lyndon A. Peer, M.D., Clinical and Research Director, Rehabilitation Center for Plastic and Reconstructive Surgery, Saint Barnabas Medical Center, Newark, N. J. With twelve contributors. Cloth. $20. Pp. 690, with 252 illustrations. Williams & Wilkins Company, 428 E. Preston St., Baltimore 2, 1959.

This volume is the joint effort of 13 contributors, each discussing a different variety of tissue transplant. They describe how tissue, organ, or gland transplants may be grafted and discuss the limitation, success, or failure of the procedure. Organs including skin and cornea, endocrine glands, teeth, blood vessels, fat, and nerves are among the many transplants discussed. The bibliography and index are of special value. This book is enthusiastically recommended to everyone in the field of medicine.

Practical Obstetric Problems. By Ian Donald, *M.B.E.*, M.D., B.S., B.A., Regius Professor of Midwifery, University of Glasgow, Glasgow. Second edition. Cloth. $11. Pp. 712, with illustrations. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11; Lloyd-Luke (Medical Books) Ltd., 49 Newman St., London, W. 1, England, 1959.

This new edition of a four-year-old textbook includes the new and important developments of the intervening years. The book is written primarily for the clinician as a convenient source of information concerning practical problems in obstetrics. To achieve this end the chapters on anatomy, embryology, and physiology of reproduction usually found in current textbooks have been omitted. The book begins with a discussion of prenatal care and ends with chapters on prematurity and the Rh factor. The management of all the pertinent problems encountered in pregnancy, labor, and the puerperium is discussed in a lucid and authoritative manner. Characteristically, one chapter is entitled Techniques and Pitfalls of Forceps Delivery and another Postpartum Collapse.

Although most of the chapters were written by the author, several were contributed by well-known British authorities. One of these contributions in particular reflects its author's profound clinical experience in his evaluation of trends in obstetric practice, such as the increased frequency of the induction of labor, induction for postmaturity, and the importance of the prevention of puerperal infection.

In general, obstetric practice in England is similar to that in the United States. Although there has been an increase in hospital births, many women are still delivered in their homes. To provide for emergency services, the "flying squad" brings most of the hospital medical facilities to them there. Some of the practices described are not used in the United States. For example, we would not include a discussion of symphysiotomy in an American textbook. Pertinent and recent references are given at the end of each chapter. The illustrations are few in number but informative and complementary to the text. This book can be read with profit by physicians and students interested in obstetrics.

Allergie und allergische Erkrankungen. Band I, allgemeiner Teil. Unter Mitarbeit von R. Backhausz et al. Herausgegeben von E. Rajka. Cloth. Pp. 638, with 74 illustrations. Akadémiai Kiadó, Alkotmány u. 21, Budapest, V, Hungary, 1959.

This volume, written with the collaboration of eight Hungarian contributors, deals with general and basic considerations. The author takes the attitude that the tie between allergy and immunology is progressively becoming closer, so that one cannot be discussed without the other. Among the subjects covered are criteria; classification and terminology; distinction between immediate and delayed types; antigens and antibodies and factors in the antigen-antibody reaction; antibody production, mediators (including histamine, acetylcholine, serotonin, and slow-reacting substance); the immunochemistry of antigens and antibody; experimental anaphylaxis; autosensitization; transplantation and tumor immunology; the role of the neuroendocrine system; pathological anatomy; the production of allergic processes; general diagnostic measures in allergy; various serologic tests in allergy and immunology; and general principles of management of allergic manifestations. In virtually all of the above subjects the most important phases are discussed, so that the reader can find at least a summary of any field bearing on hypersensitivity.

References are ample although no attempt is made to include the very old literature, as this has been covered by older textbooks. There is a tendency to overemphasize the European contributions and to underplay the American ones. The paper is excellent, but the binding is poor. As a whole, this is the most complete treatise available on the principles of allergy and a book to be owned by those allergists, immunologists, internists, pediatricians, and all others interested in immunological principles who have a reading acquaintance with German.

Parsons' Diseases of the Eye. By Sir Stewart Duke-Elder, G.C.V.O., Ph.D., D.Sc., Surgeon-Oculist to the Queen, London. Thirteenth edition. Cloth. $8.75. Pp. 613, with illustrations. The Macmillan Company, 60 Fifth Avenue, New York 11; J. & A. Churchill, Ltd., 104 Gloucester St., Portman Sq., London, W. 1, England, 1959.

Many a student's introduction to ophthalmology was through an earlier edition of this fine textbook, and for this reason it is a particular pleasure to reread it and rediscover its fine qualities. The entire field of ophthalmology is covered briefly and concisely but with sufficient detail to leave few questions unanswered, and the book has been brought up to date. Some new chapter headings have been added and some change in the order has been made. The two final chapters entitled The Causes and Prevention of Blindness and The Hygiene of Vision, which were also included in earlier editions, are particularly worthwhile, since most textbooks ordinarily do not discuss these subjects from the preventive viewpoint. This book is heartily recommended for all physicians, but particularly for general practitioners. Residents should also find it of great benefit and practicing ophthalmologists should enjoy reading it.

Progress in Hematology. Volume II. Edited by Leandro M. Tocantins, M.D. With 19 contributors. Cloth. $9.75. Pp. 290, with illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 15/16 Queen St., Mayfair, London, W. 1, England, 1959.

This series of 13 reviews of aspects of hematology is especially valuable for its extensive bibliography. Each contributor uses this material to uphold his side in controversial matters. The illustrations in the article entitled Contributions of Dynamic Cytology to Hematology are graphic and illuminating. Among the subjects covered are cytology, radiation injury and bone marrow transplantation, the sickling phenomenon, humoral factors in erythropoiesis, kernicterus, ABO incompatibility and hemolytic anemia in the newborn infant, blood preservation for transfusion, transmission of leukemia, hematological aspects of serotonin, busulfan in the treatment of leukemia, platelet transfusions, hematological complications of esophageal varices, and lipoid anticoagulants. The index is very useful. The book should be valuable to anyone studying the subjects covered, for the analyses of the material as well as for the bibliography.

Textbook of Oral Surgery. Edited by Gustav O. Kruger, B.S., A.M., D.D.S., Professor of Oral Surgery, Georgetown University School of Dentistry, Washington, D. C. Cloth. $12.75. Pp. 573, with 489 illustrations, including drawings by Biagio J. Melloni. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3; Henry Kimpton, 134 Great Portland St., London, W. 1, England, 1959.

This textbook, written entirely by dental personnel, is intended as a reference work for the undergraduate dental student. The first five chapters deal with surgical principles, techniques, bacteriology, infections, hemorrhage, and shock. They emphasize fundamental surgical teachings and are sound. Additional chapters describing abnormalities and diseases of the oral cavity are informative and worthwhile. However, the complicated surgical problems mentioned in the chapters on wounds and injuries of the soft tissues of the face, the surgical aspects of the cleft lip and cleft palate, and complicated malignant oral tumors are beyond the scope of the dental student and dental surgeon.

QUESTIONS AND ANSWERS

STATUS OF SNAKE BITE THERAPY

To the Editor:—*There has been so much controversy regarding treatment of bites from venomous snakes that I would appreciate a reasonable evaluation of this matter. The relative incidence of snake bite in the United States is quite low and therefore most physicians will rarely encounter such a case; however, I am sure such a general evaluation would be useful to everyone.*

M.D., Illinois.

Answer.—Controversies regarding the proper treatment of envenomation due to pit vipers are focused especially on use of tourniquets, cuts, and suction and on the ligature-cryotherapy method of Stahnke (1957). Currently, the brochure accompanying the antivenin distributed by Wyeth states that neither procedure should be used.

Evidence both for and against these procedures rests on only rather limited to-the-point studies. The work of Dudley Jackson (1927, 1929) and of Pope and Peterson (1946) indicated that envenomated dogs treated by tourniquets, cuts, and suction did better than control dogs. The published studies of Parrish (1955), of Leopold and his group (1957), and Ruggiero (1958) do not directly contradict the findings of the earlier workers. Parrish; Andrews and Pollard (1953); Watt (1956); Jutzy and his group (1953); Shannon (1957); Raynolds (1959), Schmaus (to be published); and Stahnke have recommended tourniquets, cuts, and suction, some with stipulations.

Shortcomings can be noted in Jackson's work, and clinical observations without controls may be misleading. Nevertheless, at least until studies now in process are published, the balance of evidence seems to indicate that the tourniquet, cut, and suction treatment has value. Jackson and Shannon have advised the making of cuts along the advancing edema front, if necessary far from the injection site. A snake usually injects less than 10 drops of venom. In the absence of evaluating studies, this consultant believes that cuts should be few and near the injection site.

No controlled studies of the ligature-cryotherapy method have been published, and Stahnke has reported only a small series of clinical cases. Controlled studies are needed to appraise the procedure as a first-aid method until antivenin is given and as extended medical treatment.

Concerning other aspects of therapy, the stricken person should remain immobile until antivenin is given. The Wyeth antivenin appears to be definitely helpful against pit vipers. It should be given early and in adequate amounts. Antibiotic therapy is needed. Parrish and co-workers (1956) have advised that a broad-spectrum antibiotic be used. Penicillin, however, is more effective against clostridia. Some evidence indicates that gas gangrene and tetanus are dangers; therefore, appropriate prophylaxis is advisable. The heart of treatment against shock appears to lie in blood transfusions. The use and choice of pressor substances must reflect general medical theory, for there are no controlled studies with them in snake bite cases. Corticosteroids apparently do not prolong or save life, according to experimental work, but Wood's (1955) patients seemed to derive much symptomatic benefit from them. Schöttler (1954) advised against antihistaminics on the basis of studies with mice, but the drugs have been given without apparent ill-effect in some human cases. Cold packs may give considerable symptomatic relief locally.

FOOD INTAKE BY LOGGERS

To the Editor:—*The modern logger, like the coal miner, is mechanized. A smaller work force handles much more wood by using chain saws and mechanical loaders. Previously, the loggers consumed fabulous quantities of food. Now camp cooks have noted a decrease in the amount of food used, especially in carbohydrate items, and an increase in the amount of meat consumed. Since the men have a wide choice of food at each meal, this change is voluntary. Do you know of any study of loggers' changing food requirements as a result of mechanization? Also, do you believe that the decreased carbohydrate intake and increased meat consumption are related to the decrease in physical effort?*

Leslie G. Sutherland, M.D.
Peterborough, Ontario, Canada.

Answer.—This consultant is not aware of any studies of the food consumption of loggers since those made in camps located in the Pacific Northwest and Great Lakes regions by Alpert, Lusby, and Goodhart in the spring of 1943 (cited in "Nutrition in Industry," Montreal, International Labour Office, 1946, pp. 89-92). These workers found the average daily calorie consumption in four different camps to range from 5,311 to 6,507, it being high-

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The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

est in camps located in the Pacific Northwest. The food and nutrition board of the National Research Council, on Jan. 29, 1944, adopted a report of its committee on nutrition of industrial workers which, for rationing purposes, recommended that loggers, and loggers alone, be placed in a category of workers requiring more than 5,500 calories per day.

In regard to the consumption of meat by loggers, Alpert, Lusby, and Goodhart made the following pertinent observations: "Traditionally, logging companies have tried to provide the loggers with an abundance of good quality food because this contributes to satisfaction with the work and a decrease in labour turnover. The loggers have a firm conviction that large amounts of meat are necessary in order to log. They believe that they cannot keep up the pace necessary, or do the heavy work required without meat at each meal. Meat alternate dishes such as macaroni and cheese, baked beans, creamed codfish, and scrambled eggs are considered 'side-dishes' and to be served as additions to the meat, not in place of it."

The decreased food intake noted in this question after decreased physical effort is in accordance with the hemostasis of energy metabolism. As their work output increases, normal healthy persons will automatically consume a larger number of calories, if available, to maintain an energy balance, and vice versa. Since the requirement for protein is relatively uninfluenced by the amount of physical work, it would be entirely physiological for loggers with a free choice of food to cut down automatically on the consumption of high-calorie carbohydrate and fat foods such as cakes and pastries.

ANXIETY NEUROSES

To the Editor:—*In the management of anxiety neuroses after ruling out organic disease, how does one explain to the patient the reason for his symptoms? Please suggest methods of coping with hyperventilation syndrome, aerophagia, globus hystericus, and fatigue and insomnia. What is the value of tranquilizers or sedatives in these conditions? How are they best prescribed?*

M.D., New York.

Answer.—The explanations for psychosomatic symptoms have to be geared to the patient's intelligence and education. In many cases, the physician should not tell the true reason for the anxiety neurosis even to highly intelligent patients because the explanation might be of such a shocking nature that the patient might refuse the explanation and leave the physician's care. It might also make psychotherapy difficult for another physician. Such is the case, for instance, if the anxiety is caused by latent homosexuality. The best way to inform the patient is not to emphasize the psychogenic origin of his or her symptoms but to give an explanation in understandable neurophysical terms. Such an explanation should emphasize that overexcitability of the sympathetic nervous system would produce, *ipso facto*, anxiety symptoms. The possible psychological reason for this assumed excitability might be hinted at but not necessarily explained in detail to the patient.

If the physician and patient are unwilling to embark on long-term psychotherapy for the treatment of hyperventilation syndrome, aerophagia, globus hystericus, and fatigue and insomnia, carbon dioxide treatment would be useful. Use of tranquilizers and sedatives should be avoided in a patient with these symptoms, because of the danger of developing addiction. Besides, most of the tranquilizers which are effective against anxiety will increase the patient's complaints of fatigue. If absolutely necessary in such a case, a medicament consisting of a combination of tranquilizer and stimulant might be tried, *cum grano salis*. There are several of these on the market, each of which contains either a barbiturate or chlorpromazine with amphetamine. In extreme cases of anxiety, with the combination of symptoms described above, electric shock treatment might be of service.

STEROID THERAPY IN COLON POLYPOSIS

To the Editor:—*A man 40 years of age developed chronic ulcerative colitis five years ago. The disease has followed a mild course, with only a few exacerbations. Recently, a routine sigmoidoscopy revealed true polyps in the sigmoid. On removal, these showed no evidence of malignancy in histological section. Barium enema showed some remaining polyps above the reach of the sigmoidoscope. If the colon were opened and the remaining polyps removed, would prolonged steroid therapy lessen the chance of further polyposis occurring?* *M.D., Pennsylvania.*

Answer.—"True" polyps probably indicate "adenomatous" polyps. The prevailing opinion, based largely on circumstantial evidence, is that they may undergo malignant transformation. Therefore, removal seems advisable. In the case described, however, the polyps above the reach of the proctoscope may be true polyps or pseudopolyps. The differentiation on radiologic and clinical grounds is difficult. The decision whether to remove them or a portion or all of the colon is difficult, depends on other considerations, and is controversial. One should bear in mind the fact that a third of carcinomas of the colon in ulcerative colitis arise as infiltrating lesions without an intermediary phase of polyposis. In some instances when careful follow-up studies at fixed intervals in patients with ulcerative colitis are possible, roentgenologically demonstrated polyps or pseudopolyps may be watched rather than proceeding with colectomy. No studies have been made as yet of the occurrence of polyps or pseudopolyps before and after prolonged steroid therapy. Of the patients with ulcerative colitis who have died from carcinoma of the colon, an insignificant number have had steroid therapy. There is as yet no evidence available to indicate whether ACTH and the adrenal steroids enhance or lessen the risk of malignancy in the colon. The role of these hormones in the therapy of ulcerative colitis is still debatable, even though this consultant is strongly of the opinion that they are quite helpful.

POLYARTERITIS AND ALLERGIC ANGIITIS

To the Editor:—*At a recent medical meeting it was obvious that there was no agreement on the differentiation between polyarteritis nodosa and allergic angiitis. Please comment and/or give bibliography.*

M.D., West Virginia.

Answer.—It is understandable that confusion should exist concerning the differential diagnosis of these two conditions, for they are closely related if not identical diseases. Clinically, both conditions are characterized by fever, malaise, and protean symptoms due to involvement of multisystems. Typically, the onset of allergic angiitis can be precisely related to administration of a drug or exposure to certain chemicals, and there is usually a history of hypersensitivity to other agents as well. Eosinophilia, bronchial asthma, and cutaneous manifestations such as purpura and subcutaneous nodules are seen more commonly in allergic angiitis than in periarteritis nodosa, in which the history of exposure to an allergen is less definite or entirely lacking. Some pathologists claim these conditions can be distinguished histologically as well as clinically, even though the basic lesion in both is an acute arteritis involving small arteries with necrosis and polymorphonuclear infiltration of the vessel wall.

From the practical standpoint, most cases are not easily categorized, since one or more of the differentiating features may be lacking. The differential diagnosis is usually of only academic interest, because treatment (adrenal steroids) is the same for the two conditions and prognosis, though said to be somewhat better for allergic angiitis, is not too dissimilar in most cases of systemic involvement. The references given below are pertinent.

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SAFETY OF X-RAY APPARATUS

To the Editor:—*In my office I have a small diagnostic x-ray machine which is usually operated at 15 ma. and 90 to 120 volts. The estimated primary radiation is about 540 ma.-sec. per week. There is no fluoroscope attachment. Please describe practical methods for measuring the amount of radiation being sustained by my employees and myself. I have been told that a person may be exposed to 0.3 rem per week for an indefinite period without danger; what is a rem and how can this be measured? What is the level of radiation exposure beneath which it is safe to have no lead shielding, assuming an indefinite exposure period?*

Robert C. Foreman, M.D., Goodyear, Ariz.

Answer.—It would be advisable for this inquirer to have a radiation physicist measure his x-ray apparatus and determine its safety. Lead shielding is a necessity for all operators. There is no safe exposure for persistent exposure to irradiation even from a supposed small dose. At present the permissible whole-body exposure to gamma rays and x-rays is set at 0.3 r per week. There are a number of companies that supply special monitoring badges which measure the exposure a person receives while administering x-rays. These concerns advertise in The Journal and in the journals of the national radiologic societies. National Bureau of Standards Handbook 59, available from the U. S. Bureau of Standards, Washington, D. C., describes regulations concerning x-ray exposure limits. The rem is a dosage unit. It is the quantity of any ionizing radiation which has the same biological effectiveness as 1 rad of x-ray in the usual energy range. (The rad is a base unit for beta rays and is 100 ergs absorbed per gram of material in question.)

ARC LIGHTS AND STERILITY

To the Editor:—*A patient whose husband works with electric arc lights (the type used in the war in searchlight units) has just delivered a stillborn infant. Their friends, who are also exposed to these lights, have had stillborn children or no children. Is there a relationship between male exposure to arc lights and sterility or stillborn infants in their family? If so, what advice should be given to such persons in regard to future childbearing?*

M. R. Hunter, M.D., Olympia, Wash.

Answer.—Though the reproductive mechanism of some fish and some fowl seems to be light-sensitive, no analogous data are to be found for man. During World War II, the Westinghouse Electric Co. made the xenon mercury light which was similar to the arc light referred to in the question. The rays produced depend, among other things, on the type of generator and the amount of voltage employed. A system of lenses acts as a filter. As a general rule, the rays produced were of a wave length of about 1,800 A. With wave lengths over 2,000 A, some ultraviolet light is generated. If not filtered out, this will simply produce pigmentation of the skin. Even with the low voltages employed, a small amount of x-radiation is generated. This is filtered out by the lens system. However, if voltages of the order of 70 kv. or higher are employed, as much as 30% of the rays produced may be x-rays. If not effectively filtered out, this radiation may render the male sterile. No effect has been described, however, which will cause stillbirth. Where high voltages are used and filtration cannot be assured, avoidance of the x-rays or the use of lead shields is desirable. If that cannot be managed, a change of employment should be considered.

FROZEN BABY FOODS

To the Editor:—*Have frozen fresh strained and chopped vegetables, fruits, and meats been placed on the market specifically for infant feeding? Have the present canned baby foods been accepted as the final word in infant feeding? I have used frozen fresh strained foods for my own children with excellent results. I feel others would be equally pleased.*

L. B. Stevens, M.D., Baltimore.

Answer.—This consultant is not aware of any manufacturer producing frozen baby foods. At the recent National Packaging Exposition, it was reported that frozen precooked baby foods in aluminum pouches may be available in supermarkets by the end of the year. According to Reynolds Metals, several manufacturers are considering the food pouch.

It is not known why such products have not appeared on the market before, but the cost factor probably is greater in the freezing process. Perhaps inquiry of some of the larger baby food manufacturers, such as Gerber, Heinz, and Beechnut, would provide more information on this subject.

SURGICAL GLOVE DERMATITIS

To the Editor:—*Because of contact dermatitis due to rubber gloves, I changed to latex rubber gloves several years ago and the dermatitis largely cleared. Recently I have become allergic to the latex gloves. Have any other types of surgical gloves been developed out of plastic?*

James L. Petry, M.D., Port Arthur, Texas.

Answer.—The information in this letter is incomplete. It is difficult to understand whether, when the inquirer changed from ordinary gloves to those made of latex, his dermatitis was relieved entirely. If it was not entirely well, then it would be impossible to state whether the patient became allergic to the latex gloves or whether use of these or any other type of rubber gloves might be responsible for continuation of the dermatitis. To determine whether this is mechanical irritation or a true allergy, it would be desirable to patch test with the rubber, the latex, and with specific ingredients of each, if these can be obtained. There have been no new plastics developed which are satisfactory substitutes for rubber. This physician might be interested in reading an article in *Occupational Hazards* (21:43, 1959) entitled "Are Your Gloves Right for the Job They're Doing?"

Inquiry was made to Donald J. Birmingham, dermatologist for the U. S. Public Health Service. He suggested the use of a glove made of a brown milled heavier rubber.

MOTTLING OF PALATE

To the Editor:—*A middle-aged female was referred to me by her dentist because of a whitish mottling of her palate extending from the gingival margins of the upper teeth for a half an inch or so out onto the palate. It has been asymptomatic. Because of some plaque formation, the dentist was concerned about the possibility of malignancy. Since the process is rather widespread, with no one area showing unusual thickening, I have not done a biopsy. I have treated the area with silver nitrate on several occasions, with no appreciable change, although it did seem gradually to regress until lately. Please give an opinion as to probable diagnosis.*

Lewis I. Younger, M.D., Winona, Minn.

Answer.—The information given does not permit a clear conception of the condition present but suggests it most likely would be focal hyperkeratosis or leukoplakia. However, the possibility of lichen planus cannot be eliminated. It is suggested that a biopsy be made to establish diagnosis.

ELECTROCONVULSIVE THERAPY AND EPILEPSY

To the Editor:—*About 1 to 2% of patients have a grand mal seizure after electroconvulsive treatment given with thiopental and succinylcholine by an anesthetist. A follow-up electroencephalogram is always normal. What could be the cause of the seizure? The patients also receive physiological oxygenation before and after treatment.*

M.D., New York.

Answer.—Electroconvulsive therapy in some instances has a tendency to potentiate already abnormal electrical patterns in the brain. One might assume that in some other instances there is a build-up of uninhibited electrical potentials in the cortex after electroshock. The mechanism is not exactly known, however. It is known that patients may develop epilepsy after electric shock from lightning. Electroencephalograms should be done frequently and for a long period of time, since there have been experiences of epilepsy after electroconvulsive therapy.

DOG AS PINWORM CARRIER

To THE EDITOR:—*I will appreciate your opinion on the possibility of dogs being carriers of pinworm (Enterobius vermicularis) and causing human infections. So far as I can learn, the dog is not a natural host or carrier of this species.*

M.D., New York.

ANSWER.—Humans are the sole natural host of E. vermicularis, perhaps the commonest of man's parasites. Transmission of infective ova can occur by any of the innumerable channels through which the fecal excretions of one man are carried to the mouth of another. It is probable that direct personal contact between persons provides the most common mode of transmission. House pets, including the dog, have been shown to play no role in spread of this infection. Enterobiasis has been reported for other animal species. Horses, for example, may be infected with E. equi and some rodents with Syphacia obelata. Human infections have been reported with the latter parasite, but not by passage through dogs.

MALIGNANT ERYTHROCYTOSIS

To THE EDITOR:—*Please indicate the treatment of malignant erythrocytosis (Di Guglielmo's disease) in a 4-year-old child.*

Edwin M. Meek, M.D., Greenwood, Miss.

ANSWER.—Malignant erythrocytosis is a condition for which there is no known treatment except symptomatic care. When patients suffering from this condition are anoxic, transfusions are indicated. None of the agents used in leukemia has been found to be effective in this condition. Apparently the immature and anarchistic red blood cells do not respond to suppression as white blood cells of a similar nature do. Therefore, there is no real help that can be given to any patient with this syndrome.

CHICKENPOX IN EARLY PREGNANCY

To THE EDITOR:—*I would like to know if there is any danger to the child if and when the mother contracts chickenpox during the early first trimester of pregnancy. Is gamma globulin indicated if the infection is extremely mild?*

M.D., Illinois.

ANSWER.—There is practically no danger to the child when the mother contracts chickenpox. Gamma globulin is not indicated.

GELATIN AS FUNGICIDE AID

To THE EDITOR:—*For 10 years a patient had microscopically demonstrated ringworm infection of the fingernails which resisted all usual methods of treatment until gelatin, in the form of dessert, was added to the daily food intake. Then Whitfield's ointment, double the U. S. P. strength, effected a complete cure when applied daily, despite previous failures. Please advise as to any reports on use of gelatin as an adjunct with a fungicide in this frequently intractable disease.*

M.D., Florida.

ANSWER.—No report in the literature is known on oral administration of gelatin to supplement treatment of ringworm of the nails. The observation reported is interesting. It should be supported by study of a large series of cases in order to afford more valid conclusions.

COUGHING AFTER CATARACT OPERATION

To THE EDITOR:—*The response to a question on coughing after cataract extraction* (J. A. M. A. 169:*1546 [March 28]* 1959) *contained information which might be misleading. The answer stated that long-acting inhibitors of cholinesterase, such as acetazolamide, chlorothiazide, and ethoxzolamide, could be used to maintain (i. e., lower) the intraocular pressure. Acetazolamide and ethoxzolamide are inhibitors of carbonic anhydrase, not of cholinesterase, and of course are valuable agents for lowering intraocular pressure. Chlorothiazide has shown significant carbonic anhydrase activity in vitro and may have some of this activity in vivo, although its mechanism of action is not precisely known. However, chlorothiazide is not generally effective in lowering intraocular pressure.*

Charles Aronberg, M.D.
401 S. Cochran Ave.
Los Angeles 36.

The above comment was referred to the consultant who answered the original question, and his reply follows.—ED.

To THE EDITOR:—*The physician who took exception to the use of the term cholinesterase is correct. Through a typographical error, cholinesterase was used rather than the correct term carbonic anhydrase. The drugs mentioned are effective inhibitors of carbonic anhydrase. There is no qualified evidence that chlorothiazide acts to lower intraocular pressure; therefore, it cannot be considered a useful drug in the treatment of glaucoma.*

WASHINGTON NEWS

International Research Developments . .
Senate Committee to Study Drug Prices . .
Age Ceiling for Pilots . .
Poliomyelitis Rate . .

BROADER MEDICAL EXCHANGES WITH SOVIET UNION PROPOSED

Russian and American officials discussed increased medical research cooperation between the two nations during Russian Premier Nikita Khrushchev's visit to this country.

The informal talks were held during a morning tour of the National Institutes of Health by Khrushchev's personal physician, Dr. A. M. Markov and his companion and interpreter, Dr. V. N. Butrov. They were guided around NIH's 14-story clinical center by Arthur S. Flemming, Secretary of Health, Education, and Welfare; Dr. Leroy E. Burney, U. S. surgeon general; and Dr. James A. Shannon, assistant surgeon general and director of NIH.

Khrushchev himself had been slated to see the NIH in Bethesda, Md., but canceled the trip due to the press of other business. Dr. Markov is chief of medical service for the Kremlin and a member of the Collegium of the Ministry of Health.

Welcoming the visitors, Dr. Burney declared, "No nation, seeking better health, takes it from another; and the gains of any nation help everywhere to advance this common cause of mankind."

Replying, Dr. Markov said, "The doctors of our two countries can certainly get together, and help the health of people throughout the world."

Types of exchanges and research projects that would be most fruitful were discussed during the visit. Particular interest was shown in research on poliomyelitis, cancer, and heart disease. However, asked which "disease" he would like to see most progress on, the gray-haired Russian physician said with a smile, "Old age."

There was talk of expanding the present medical exchange program to send eight teams of American scientists to Russia and an equal number of Russian groups to this country before the end of the year. A participant in the discussions said joint research projects might include either splitting up the work or working in the same field and comparing results.

Formal exchange agreements were to be worked out after Khrushchev returned to Russia.

Meanwhile, Sen. Hubert H. Humphrey (D., Minn.), Chairman of the Senate government operations subcommittee on international health, said that "inadequate financing" of U. S. physicians' travel to the Soviet Union "remains a key handicap." He said he "will be working on this problem in next year's appropriations legislation."

According to a progress report compiled by the subcommittee on the exchange programs between the U. S. and Russia in all fields, including medical, the HEW Department stated that "the problem of financing East-West exchanges has become a major deterrent in planning future exchanges in its field . . ."

In another development involving international cooperation, HEW Secretary Flemming revealed that the U. S. government is making special voluntary contributions totaling 6 million dollars to the World Health Organization and the Pan American Health Organization. All told, the official said, the United States will spend some 100 million dollars on international health activities during the current fiscal year. This would be about 20 million dollars more than last year. "This kind of investment helps people all over the world," Flemming told a news conference. "Rapid progress is emerging in this field."

Flemming also said that increased cooperation with Russia probably will involve, among other things, exchanges of research scientists to work in laboratories of both countries to familiarize themselves with different methods of research.

DRUG PRICE INQUIRY SCHEDULED

The Senate antitrust subcommittee, headed by Sen. Estes Kefauver (D., Tenn.), scheduled hearings starting Nov. 30 on retail prices of drugs. Prices charged for drugs used in treating arthritis will be the lead-off subject. Later the subcommittee plans to investigate prices of antibiotics, antidiabetic drugs, hormones, and tranquilizers.

In announcing the sessions Senator Kefauver said he had received more complaints from the public about the prices of drugs in the last two years than about those of any other group of products. "Prominent among these complaints are letters from older people about the prices they must pay for drugs used in the treatment of arthritis," he said in a statement.

"There are more than 10 million people in the United States suffering from rheumatic diseases, 1 million of them permanently disabled. Many of the older people say their income consists of their social security benefits and that, after paying for the drugs, they do not have enough to live on," he said.

At previous congressional hearings on drug prices, the drug industry has pointed out the high cost of the extensive research programs that drug companies continually carry on to improve their products and develop new ones.

The Senate investigation had originally been slated to begin during the previous session of Congress but was postponed.

The subcommittee disclosed it had subpoenaed the records of some major New York City banks, investment companies, and mutual funds and those of 20 drug manufacturers.

The hearings are part of a series of sessions on so-called administered price industries. Senator Kefauver contends that in some industries prices are set more by agreements among manufacturers than in response to supply and demand. However, industry representatives have denied this at the Senate hearings.

The drug companies whose records were subpoenaed were American Cyanamid Co.; American Home Products Corp.; Bristol-Myers Co.; Olin Mathieson Chemical Corp.; Chas. Pfizer & Co., Inc.; Sterling Drug, Inc.; Carter Products, Inc.; U. S. Vitamin & Pharmaceutical Corp.; and Vick Chemical Co.; all of New York; Eli Lilly & Company, Indianapolis; Parke Davis & Company, Detroit; Abbott Laboratories, North Chicago, Ill.; Merck & Co., Inc., Rahway, N. J.; Schering Corporation, Bloomfield, N. J.; Smith Kline & French Laboratories, Philadelphia; G. D. Searle & Co., Skokie, Ill.; The Upjohn Company, Kalamazoo, Mich.; Warner-Lambert Pharmaceutical Co., Morris Plains, N. J.; Mead Johnson & Company, Evansville, Ind.; and Norwich Pharmacal Co., Norwich, N. Y.

AGE LIMITS PROPOSED FOR AIRLINES PILOTS

The Federal Aviation Agency recommended that all airline pilots be retired at the age of 60 years and that jet aircraft pilots be no older than 55 years.

The Airline Pilots Association objected to the proposals and urged the FAA to hold hearings on the matter. The association contended that pilots should be allowed to fly as long as they are found physically and mentally capable, regardless of their age.

Generally agreeing with the agency was the Air Transport Association, representing the airline industry, which declared that current medical knowledge showed a definite susceptibility for medical deficiencies to increase with age. However, the ATA said it recognized that any maximum age limit is arbitrary and that there would be "good pilots in any given age group who would be in sufficiently good condition that they could continue flying beyond the age limitation."

The ATA disagreed with the 55-year age limit for jet pilots, saying that this would cause "unnatural and undesirable stresses" on the airlines and their personnel.

The Civil Aviation Medical Association and the Civil Air Surgeon's office both supported the recommended age limits. The FAA recently set strict health standards for both commercial and private pilots, disqualifying those with certain types of diabetes and heart disease, among other conditions.

REPORT ON POLIOMYELITIS RATE

After declining for two weeks, the incidence of paralytic poliomyelitis increased abruptly to 326 cases during the week ended Sept. 19, the second highest number reported for any week this year. In contrast, 273 paralytic cases were listed for the week ending Sept. 12 and 291 for the previous week. Highest total for the year was 330 for the last week in August.

PHS said preliminary estimates indicate 150 deaths from poliomyelitis as of July 31 this year, compared with 10 at the same time a year ago. However, the poliomyelitis season started much earlier this year.

Five states accounted for most of the latest increase in cases—California, New York, Washington, Minnesota, and North Carolina.

MORSE POSTPONES MEDICAL COSTS PROBE

Sen. Wayne Morse (D., Ore.), who has severely criticized the medical profession in speeches, postponed until next year his proposed investigation of Blue Cross-Blue Shield rates in the District of Columbia. More than a year ago the Oregon lawmaker announced he would hold hearings on the subject, after a rise in rates by Group Hospitalization, Inc., Washington's Blue Cross Plan. After a single hearing he said the staff of his Senate District of Columbia subcommittee would prepare for more extensive hearings on the entire field of medical costs in the district. Recently Senator Morse said the investigation would not begin until after Congress convenes in January.

NEW U. S. FOOD GUIDE EXPOSES DIET QUACKERY

Food and diet experts warned the American public in a government document that hundreds of millions of dollars are wasted every year by overweight persons on quack diets, pills, and gadgets.

Writing in the Agriculture Department's 736-page volume, "Food," an expert declared that 10 million overweight persons waste 500 million dollars annually on "miracle" diets and patent medicines. Helen S. Mitchell, dean of the University of Massachusetts School of Home Economics, said the would-be reducers are ignoring the simple fact that they are supplying their bodies with more food than they can burn up in physical activity.

"The only known cure for overweight is to eat food that furnishes less energy than one needs for body maintenance," said another expert in the volume.

MISCELLANY

U. S. Surgeon General Leroy E. Burney said the type of encephalitis occurring in New Jersey, eastern equine encephalitis, is the least common and most highly fatal of the three known varieties. He said the state's mosquito eradication program should result in a decline in the epidemic, the worst since 34 cases were reported in Massachusetts in 1938.

More than 5 million square miles in the Americas has been freed of malaria, according to a report of the Pan American Health Organization. The delegates to the PAHO's 11th annual meeting here were told that total malaria eradication has been achieved in the U. S., Chile, Puerto Rico, Barbados, and Martinique.

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MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. F. J. L. Blasingame, 535 North Dearborn St., Chicago 10, Executive Vice-President.
1959 *Clinical Meeting, Dallas, Texas, Dec. 1-4.*
1960 Annual Meeting, Miami Beach, Fla., June 13-17.
1960 *Clinical Meeting,* Washington, D. C., Nov. 29-Dec. 2.
1961 Annual Meeting, New York City, June 26-30.
1961 Clinical Meeting, Denver, Nov. 28-Dec. 1.
1962 Annual Meeting, Chicago, June.

AMERICAN

1959

October

ACADEMY OF PSYCHOSOMATIC MEDICINE, Sheraton-Cleveland Hotel, Cleveland, Oct. 15-17. For information write: Dr. Bertram B. Moss, Suite 1035, 55 E. Washington St., Chicago 2, Secretary.

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY, The Palmer House, Chicago, Oct. 11-16. Dr. William L. Benedict, 15 Second St., S. W., Rochester, Minn., Executive Secretary.

AMERICAN ASSOCIATION OF MEDICAL ASSISTANTS, Benjamin Franklin Hotel, Philadelphia, Oct. 16-18. Mrs. Stella Thurnau, 510 N. *Dearborn, Room* 924, Chicago 10, Executive Secretary.

AMERICAN ASSOCIATION OF MEDICAL RECORD LIBRARIANS, Radisson Hotel, *Minneapolis, Oct. 12-15. Miss Margaret G. Scully, 510 N.* Dearborn St., Chicago 10, Director.

AMERICAN COLLEGE OF CARDIOLOGY, Benjamin Franklin Hotel, Philadelphia, Oct. 23-25. Dr. Philip Reichert, Empire State Bldg., New York 1, Executive Director.

AMERICAN COLLEGE OF CHEST PHYSICIANS, 25th Anniversary Homecoming Meeting, Albuquerque, N. M., Oct. 14-17. Mr. Murray Kornfeld, 112 E. Chestnut St., Chicago 11, Executive Director.

AMERICAN COLLEGE OF PREVENTIVE *MEDICINE, Hotel Ambassador,* Atlantic City, N. J., Oct. 21-22. Dr. John J. Wright, P. O. Box 1267, Chapel Hill, N. C., Secretary-Treasurer.

AMERICAN HEART ASSOCIATION, Trade and Convention Center, Philadelphia, Oct. 23-27. Mr. William F. McGlone, 44 E. 23rd St., New York 10, Secretary.

AMERICAN OTORHINOLOGIC SOCIETY FOR PLASTIC SURGERY, INC., Conrad Hilton Hotel, Chicago, Oct. 11. Dr. Joseph G. Gilbert, 75 Barberry Lane, Roslyn Heights, N. Y., *Secretary.*

AMERICAN PSYCHIATRIC ASSOCIATION, Detroit Divisional Meeting, Hotel Statler, Detroit, Oct. 29-31. Dr. Benjamin Jeffries, 16321 Mack Ave., *Detroit 24, Co-Chairman, Planning Committee.*

AMERICAN PUBLIC HEALTH ASSOCIATION, Convention Hall, Atlantic City, N. J., Oct. 19-23. Dr. Berwyn F. Mattison, 1790 Broadway, New York 19, N. Y., Executive Director.

AMERICAN SCHOOL HEALTH ASSOCIATION, Claridge Hotel, Atlantic City, N. J., Oct. 18-23. Dr. A. O. DeWeese, 515 E. Main St., Kent, Ohio, Executive Secretary.

AMERICAN SOCIETY OF FACIAL PLASTIC SURGERY, Chicago, Oct. 15-17. *Dr. Samuel M. Bloom,* 123 E. 83rd St., New York 28, Secretary.

AMERICAN SOCIETY OF PLASTIC AND RECONSTRUCTIVE SURGERY, Hotel Fountainebleau, Miami Beach, Fla., Oct. 18-23. Dr. Thomas Ray Broadbent, 508 E. South Temple, Salt Lake City, General Secretary.

AMERICAN SOCIETY OF TROPICAL MEDICINE AND HYGIENE, Claypool Hotel, Indianapolis, Oct. 28-31. Dr. Rolla B. Hill, 3575 St. Gaudens Road, Miami 33, Fla., Executive Secretary.

ARIZONA ACADEMY OF GENERAL PRACTICE, Hotel Valley Ho, Scottsdale, Oct. 15-17. Dr. Arthur V. Dudley Jr., 1524 N. Norton, Tucson, Ariz., Convention Chairman.

ASSOCIATION OF CLINICAL SCIENTISTS, Sheraton-Park Hotel, Washington, D. C., Oct. 10. Dr. Robert P. MacFate, 323 *Northwood Rd., Riverside,* Ill., Secretary-Treasurer.

ASSOCIATION OF LIFE INSURANCE MEDICAL DIRECTORS OF AMERICA, Hotel Statler Hilton, New York City, Oct. 21-23. Dr. Royal S. Schaaf, Prudential Insurance Co., P. O. Box 594, Newark 1, N. J., Secretary.

CENTRAL NEUROPSYCHIATRIC ASSOCIATION, Hotel Roosevelt, New Orleans, Oct. 16-17. Dr. Ralph M. Patterson, Columbus Psychiatric Institute, 473 W. 12th Ave., Columbus 10, Ohio.

CLINICAL ORTHOPAEDIC SOCIETY, Memphis, Oct. Dr. Charles H. Frantz, 1810 Wealthy St., S. E., Grand Rapids 6, Mich., Secretary-Treasurer.

CONGRESS OF NEUROLOGICAL SURGEONS, Americana Hotel, Miami, Fla., Oct. 28-31. Dr. Richard L. DeSaussure, *Suite 101 B, 20 S. Dudley St.,* Memphis, Tenn., Secretary-Treasurer.

DELAWARE, MEDICAL SOCIETY OF, Oct. 14-15. Mr. Lawrence J. Morris Jr., 621 Delaware Ave., Wilmington 1, Del.

NATIONAL REHABILITATION ASSOCIATION, Statler-Hilton Hotel, Boston, Oct. 26-28. Mr. Edward D. Callahan, 14 Court Square, Boston 8, Conference Chairman.

NATIONAL SAFETY CONGRESS AND EXPOSITION, Chicago, Oct. 19-23. For *information write: National Safety Council,* 425 N. *Michigan, Chicago 11,*

NEW ENGLAND SOCIETY OF ALLERGY, Longwood Towers, Boston, Oct. 28. For information, write NESA, 300 Longwood Ave., Boston.

NORTH CAROLINA ACADEMY OF GENERAL PRACTICE, ALTERNATE MEETING FOR FALL CRUISE, Sedgefield Manor, Greensboro, Oct. 15. Dr. Norman A. Fox, Guilford College, N. C., Publicity Chairman.

OSLER SOCIETY OF ST. LOUIS CITY HOSPITAL, Bellevue-Stratford and Jefferson Medical College, Philadelphia, Oct. 26-27. Dr. Jack Barrow, 110 S. Central, St. Louis 5, Secretary-Treasurer.

PACIFIC COAST OBSTETRICAL & GYNECOLOGICAL SOCIETY, St. Francis Hotel, San Francisco, Oct. 21-24. Dr. Donald W. de Carle, *2000* Van Ness Ave., San Francisco, Chairman.

PACIFIC NORTHWEST SOCIETY OF PATHOLOGISTS (Fall Meeting), Gearhart, Ore., Oct. 15-17. Dr. Nelson R. Niles, U. of Oregon Med. School, Portland 1, Ore., Secretary.

PENNSYLVANIA, MEDICAL SOCIETY OF THE STATE OF, *Penn-Sheraton Hotel,* Pittsburgh, Oct. 18-23. Mr. Lester H. Perry, 230 State St., Harrisburg, Pa., Executive Director.

SOCIETY OF PELVIC SURGEONS, Medical College of Virginia, Richmond, Va., Oct. 22-24. Dr. Laman A. Gray, 408 Heyburn Bldg., Louisville 2, Ky., Secretary.

WESTERN ORTHOPEDIC ASSOCIATION, Brown Palace Hotel, Denver, Oct. 18-22. Vi Mathiesen, 354 21st St., Oakland 12, Calif., Executive Secretary.

November

ACADEMY OF MEDICINE OF CLEVELAND SEMINAR ON RECENT ADVANCES IN DIAGNOSIS AND THERAPY OF MALIGNANT DISEASE, Cleveland, Nov. 18-19. Dr. H. S. Van Ordstrand, 2009 Adelbert Rd., Cleveland 6, Chairman.

AMERICAN *ACADEMY FOR* CEREBRAL *PALSY, Statler Hilton Hotel,* Los Angeles, Nov. 30-Dec. 2. Dr. Glidden L. Brooks, Brown University, Providence 12, R. I., Secretary.

AMERICAN ASSOCIATION OF BLOOD BANKS, *Edgewater Beach Hotel,* Chicago, Nov. 4-7. Dr. John B. Alsever, Southwest Blood Banks, 1211 W. Washington St., Phoenix, Ariz., Secretary.

AMERICAN CLINICAL AND CLIMATOLOGICAL ASSOCIATION, The Homestead, Hot Springs, Va., Nov. 2-4. Dr. F. Tremaint Billings, 420 Medical Arts Bldg., Nashville, Tenn., Secretary.

AMERICAN COLLEGE OF CHEST PHYSICIANS, Dallas, Texas, Nov. 29-30. Mr. Murray Kornfeld, 112 E. Chestnut St., Chicago 11, Executive *Secretary.*

AMERICAN FRACTURE ASSOCIATION, Roosevelt Hotel, New Orleans, Nov. 1-5. Dr. H. W. Wellmerling, 610 Griesheim Bldg., *Bloomington,* Ill., Executive Secretary.

AMERICAN MEDICAL WOMEN'S ASSOCIATION, Arlington Hotel, Hot Springs, Ark., Nov. 12-15. Mrs. Lillian T. Majally, 1790 Broadway, New York 19, Executive Secretary.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES, Edgewater Beach Hotel, Chicago, Nov. 2-4. Dr. Ward Darley, 2530 Ridge Ave., Evanston, Ill., Executive Director.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES, Mayflower Hotel, Washington, D. C., Nov. 8-11. Lt. Col. George M. Beam, AUS, Ret., Suite 718, New Medical Bldg., 1726 Eye St., N. W., Washington 6, D. C., Executive Secretary.

CENTRAL *SOCIETY* FOR *CLINICAL RESEARCH, Drake Hotel,* Chicago, Nov. 6-7. Dr. Austin S. Weisberger, 2065 Adelbert Rd., Cleveland 6, Secretary.

CHICAGO HEART ASSOCIATION, SYMPOSIUM ON CEREBRAL VASCULAR DISEASES, Knickerbocker Hotel, Chicago, Nov. 7. Dr. C. Bruce Taylor, c/o Chicago Heart Assn., 22 W. Madison, Chicago 2, Chairman.

CONFERENCE ON ELECTRICAL TECHNIQUES IN MEDICINE AND BIOLOGY, Sheraton Hotel, Philadelphia, Nov. 10-12. Dr. Herman P. Schwan, Moore School of Electrical Engineering, University of Pennsylvania, Philadelphia, Chairman.

DISTRICT OF COLUMBIA, MEDICAL SOCIETY OF, Statler-Hilton Hotel, Washington, D. C., Nov. Mr. Theodore Wiprud, 1718 M Street, N. W., Washington 6, D. C.

GASTROENTEROLOGY RESEARCH GROUP, Drake Hotel, Chicago, Nov. 6. For information write Dr. Charles F. Code, Mayo Clinic, Rochester, Minn.

GERONTOLOGICAL SOCIETY, INC., Statler Hotel, Detroit, Nov. 12-14. Mrs. Marjorie Adler, 660 S. Kingshighway Blvd., St. Louis 10, Administrative Secretary.

ILLINOIS ACADEMY OF GENERAL PRACTICE, Morrison Hotel, Chicago, Ill. Nov. 9-12. Dr. H. Marchmont-Robinson, 14 E. Jackson Blvd., Chicago 4, Executive Secretary.

INTERNATIONAL COLLEGE OF SURGEONS, SECOND WESTERN REGIONAL MEETING, Stardust Hotel, Las Vegas, Nev., Nov. 22-24. Dr. F. M. Turnbull Jr., 1930 Wilshire Blvd., Los Angeles 57, Secretary-Treasurer.

INTER-SOCIETY CYTOLOGY COUNCIL, Statler-Hilton Hotel, Detroit, Nov. 19-21. Dr. Paul A. Younge, 1101 Beacon St., Brookline 46, Mass., *Secretary-Treasurer.*

INTERSTATE POSTGRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA, The Palmer House, Chicago, Nov. 2-5. Mr. Roy T. Ragatz, Box 1109, Madison 1, Wis., *Executive Secretary.*

MICHIGAN ACADEMY OF GENERAL PRACTICE, 13TH ANNUAL FALL POSTGRADUATE CLINIC, Sheraton-Cadillac Hotel, Detroit, Nov. 11-12. Dr. F. P. Rhoades, 970 Maccabees Building, Detroit 2, *Convention Manager.*

NATIONAL PROCTOLOGIC ASSOCIATION, Chicago, Nov. Dr. George E. Mueller, 59 E. Madison, Chicago 2, Secretary.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, *Palmer House,* Chicago, Nov. 29-Dec. 2. Dr. Dean W. Roberts, 2023 W. Ogden Ave., Chicago 12, Executive Director.

OMAHA MID-WEST CLINICAL SOCIETY, Civic Auditorium, Omaha, Nov. 2-5. Mrs. Reta M. Crowell, 1031 Medical Arts Bldg., Omaha 2, Executive Secretary.

PUERTO RICO MEDICAL ASSOCIATION, Santurce, Nov. 24-28. Mr. J. A. Sanchez, Box 9111, Santurce 29, Puerto Rico, Executive Secretary.

RADIOLOGICAL SOCIETY OF NORTH AMERICA, INC., Palmer House, Chicago, Nov. 15-20. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary-Treasurer.

SAN DIEGO ACADEMY OF GENERAL PRACTICE, Hotel *Riviera, Las* Vegas, Nev., Nov. 12-14. *For information write:* Dr. Harold Peterson, 5950 El Cajon Blvd., San Diego 15, Calif.

SOCIETY FOR THE SCIENTIFIC STUDY OF SEX, Barbizon Plaza Hotel, New York City, Nov. 7. Mr. Robert V. Sherwin, Suite 704, 1 E. 42nd St., New York 17, Executive Secretary.

SOUTHERN MEDICAL ASSOCIATION, Atlanta, Nov. 16-19. Mr. V. O. Foster, 2601 Highland Ave., Birmingham 5, Ala., Executive Secretary-Treasurer.

SOUTHWESTERN MEDICAL ASSOCIATION, *Roswell, N. M.,* Nov. 5-7. Dr. Russell L. Deter, 1501 Arizona St., El Paso, Texas, Secretary.

WESTERN SURGICAL ASSOCIATION, The Broadmoor, Colorado Springs, Colo., Nov. 19-21. Dr. John T. Reynolds, 612 N. *Michigan* Ave., Chicago 11, Secretary.

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USE AND OVERUSE OF TRANQUILIZERS

Frank Orland, M.D., Camden, N. J.

Tranquilizing drugs render an incalculable service in the hands of the general practitioner as the first line of defense in controlling emotional illness, but their prolonged use is beset with limitations and dangers. In the first of two cases cited here, a 37-year-old man took reserpine for a year to relieve a chronic anxiety state; he then took on additional responsibilities, which led to increasing the dosage. After much damage had been done, psychotherapy at length rendered him symptom-free. In the second case, a 34-year-old man constantly beset by family problems was treated with barbiturates and meprobamate. He became excessively dependent on drugs and was hospitalized twice for severe breakdowns before psychotherapy was instituted for the purpose of correcting the underlying maladjustments. The constant use of tranquilizers over extended periods of time will cause a worsening of the psychiatric symptoms unless caution is exercised.

During the last decade, we have witnessed the advent of a new and powerful group of psychochemotherapeutic agents, popularly described as tranquilizers or ataraxics. Included in this group are such compounds as reserpine, meprobamate, chlorpromazine, and promazine. As pointed out by Fazekas and others,[1] tranquilizers or ataraxics differ from the aliphatic depressants (i. e., barbiturates, chloral hydrate, paraldehyde, and bromides) in that the former do not reduce cerebral oxygen consumption, act at subcortical levels, and do not cause a descending depression of the neuroaxis beginning with the phylogenetically higher centers. Accordingly, Winkelman[2] has suggested substitute terminology for chlorpromazine, such as reticular formation depressant, diencephalic depressant, or ascending depressant. These medicaments have received widespread use by the general practitioner in dealing with mental illness and emotional problems.

There is no doubt that the general practitioner renders an incalculable service as the first line of defense in controlling and managing emotional illness. Without his help, psychiatrists would be overwhelmed and inundated by patients who either do not immediately require psychiatric care or would not benefit from it. Occasionally, however, in the well-intentioned attempt to give a patient continued relief over an extended period of time, important psychological implications and consequences may be overlooked. Dickel and Dixon[3] have emphasized the likelihood of aggravating emotional illness through the use of tranquilizers. The question then arises, if these psychochemo-

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From the Department of Psychiatry, School of Medicine, University of Pennsylvania.

therapeutic agents are to be utilized effectively by the general practitioner, what limitations and dangers inherent in their prolonged use should be considered?

Use by the General Practitioner

The uses of these drugs for psychiatric problems by the general practitioner to reestablish a psychobiological homeostasis are many and varied. Several of the more prominent indications are aiding the patient over a temporary emotional disturbance due to excessive environmental stresses (for example, tensions in a girl about to be married), controlling the hyperactivity of a psychotic until hospitalization, compensating a mild depressive state, maintaining a mildly disturbed senile patient, reducing transient mild anxiety states, controlling acute alcoholic states, stabilizing chronic alcoholics, and controlling withdrawal symptoms of drug addiction. Needless to say, the type of tranquilizer selected and the dosage utilized are predicated on the patients' needs and clinical responsiveness.

In administering these drugs, it is often more effective to combine use of the medicament with supportive reassurance and suggestions to decrease excessive environmental stress and reduce irrational fears, allowing the patient to ventilate thoughts and feelings, and other techniques which may decrease strains on the personality structure. For example, with a decompensating senile patient, it is of importance to reeducate the family so that they may participate in his successful management. With this type of patient, it is essential to maintain his emotional security, to give him a sense of importance and of being needed, and to increase his feelings of worthiness and personal dignity. This necessitates the interpretation of the patient's problems to those who are responsible for his care and the gaining of their tolerance and active assistance in achieving these goals.

It must be kept in mind that chemotherapy as well as the shock therapies (such as electroshock therapy and insulin shock therapy) do not change the basic personality structure. They compensate a personality which has decompensated, bringing it back to the previous level of functioning prior to the onset of the emotional disturbance. Therefore, the use of these drugs alone is a doubtful procedure where the patient has the type of personality structure and the motivation to benefit from psychotherapy. In this situation, tranquilizers, if used at all, serve best as an adjunct to psychotherapy. As Guartney and associates[4] have pointed out, tranquilizers provide temporary relief at best, and what is usually needed is psychotherapy.

Psychiatric Consequences of Prolonged Use of Tranquilizers

In quite a few patients, despite the heroic attempts at tranquilization over an extended period of time, the personality continues to decompensate, new psychiatric symptomatology emerges, and the entire reality situation becomes worse. What may occur psychiatrically with the continued prolonged use of tranquilizers?

Prolonged administration of tranquilizers may decrease tensions to such a degree that the patient becomes oblivious to the realities of life. A certain minimum level of anxiety is a prerequisite for psychobiological survival since it makes one aware of existing problems and furnishes motivation to seek their solution. If an oversuppression of anxiety occurs, it may eventually lead to greater pathological symptoms than the original symptom complex. The patient no longer has any worries, no longer plans logically, tends to make impulsive decisions, may manifest defective reasoning and judgment, and as a result may find himself in real difficulties. These will create further problems with their associated anxieties and tensions, necessitating increasing dosages of the tranquilizer to mask it. Thus, a vicious cycle is established in which the patient continues to decompensate clinically. The following case illustrates this.

Case 1.—This 37-year-old man came into treatment with a mixed anxiety and depressive state. For the preceding three months, he had been experiencing increasing episodes of crying with associated feelings of helplessness and despair, insomnia, anorexia, generalized tension, restlessness, and anxiety. Because of this, he was in danger of losing his job.

His medical history revealed that he had had rheumatic fever as a child, with consequent rheumatic heart disease, for which the Army had rejected him. However, he had always been cardiologically compensated without resorting to medicaments. In 1953, radiology disclosed a healed duodenal ulcer; since this date the patient had been intermittently treated for "nerves" by various physicians.

His personality history revealed a chronic anxiety state, hyperactivity, strong tendencies toward exactitude, perfectionism, and extreme neatness. Family history revealed that the father (who was an aggressive salesman) separated from the mother (who was a chronic worrier, hypochondriacal, and over-protective of the patient) when the patient was 15 years old. He then lived with his mother and grandmother until he was 27, when he married. After this, his mother and father reunited.

The present illness was precipitated three months previously when he was advised to suddenly discontinue use of reserpine, which he had been taking for the preceding year. For that year the patient had been on reserpine therapy for anxieties and tensions resulting presumably from increased occupational stresses. At first, he felt relaxed, his apprehensiveness lessened, and he felt buoyant. He took on greater responsibilities at work and developed anxieties and tensions again, but he covered these over with increasing dosages of the medicament. He then became listless, lost interest in social activities, became impulsive in his actions, and began using defective judgment in handling his personal affairs. He depleted his bank account of about $3,000 and went into debt for about the same amount through unnecessary purchases of a new car and new furniture. As a result of these reality problems he developed marked anxiety, but again an attempt was made to cover it through increased use of medicaments. This time no relief was gained, and he continued to decompensate psychiatrically. He was then seen once weekly in psychotherapy for a period of six months, at the end of which time he was symptom-free and was taking no medicaments. Information received three years later indicated that he was doing well.

Comment.—The above case indicates the importance of constantly reevaluating the patient's behavior patterns in present life situations when these drugs are being administrated. Prolonged administration of tranquilizers tends to fortify the patient's misconceptions that the causative factors are organic rather than functional. If the functional aspects are not emphasized, the development of an iatrogenic organic neurosis may be fostered. This tends to serve as a barrier or resistance toward facing and dealing with emotional conflicts. If the medicament fails to alleviate the somatic symptomatology, both patient and physician become frustrated and discouraged. It is therefore highly advisable to emphasize the functional components in the etiology of the symptoms and the temporary nature of the help given by tranquilizers.

There are a group of patients whose personalities require that they maintain complete control over their environment to achieve emotional security. Excessive tranquilization may lead to increasingly ineffective efforts in this direction due to diminution of energies and impairment of ego functions (reasoning, judgment, and apperception). Consequently, there is further emotional insecurity and an increase in symptomatology. Tranquilization is then increased to cover this, and a vicious cycle is established leading to increased personality decompensations. Therefore, with this group of persons, caution should be exercised regarding the intensity of dosage.

Prolonged administration of tranquilizers may foster undue dependency on both the medicaments and the physician. Patients often wish for the "magic pill"—an omnipotent potion which is swallowed and painlessly relieves their emotional turmoil. Their wish is for something to be done to them so they can sit passively without putting out any effort in getting well, acting almost as a disinterested third party (as in receiving an injection of penicillin). However, this attitude diverts the patient's efforts from realistic problems in his life situation and from the emotional conflicts within himself which created the symptoms. This dependency may lead to increased feelings of inadequacy and helplessness, resulting in increased need for the medicament, and deeper dependency. Thus, a vicious downward cycle may be initiated with possible habituation to the drug. Emotional conflicts are perpetuated rather than resolved. The psychopathology is masked but continues to cause maladaptation, maladjustment, and clinical symptoms. The possibility of addiction to the medicament must also be considered as part of increased dependency on the drug. Stough,[3] in a study on meprobamate, concluded that no habituating properties were demonstrable. However, the following case indicates that habituation may occur.

Case 2.—This 34-year-old man had had chronic anxiety and tensions since 1946. Family history revealed that the father had died when the child was 16 months old; the child was raised by an alcoholic mother. At the age of 24 years, he married a dominant, aggressive woman who ruled him at her will.

From 1946 through 1956, he was treated with barbiturates for daytime sedation and sleep. As his family increased, more tensions developed, and meprobamate therapy was started in 1956. Not only were his tensions relieved, but he experienced a mild euphoria and exhilaration. However, he became more inadequate at home, felt more helpless in his relationship with his wife, and proceeded to cover these feelings by increasing his meprobamate dosage. Soon he was taking 16 400-mg. tablets of meprobamate a day. He became confused and befuddled at work, made numerous errors, and job loss was threatening.

He was admitted to a psychiatric hospital, where they immediately deprived him of all meprobamate. This caused withdrawal symptoms of nausea, vomiting, muscular tremors, depression, and one convulsion, all within a period of 24 hours. He felt fine the next day and was discharged in three weeks. He was placed on meprobamate therapy again, and the same cycle ensued. He was rehospitalized and this time the drug was withdrawn gradually. He also received seven electroshock treatments. Within one month after discharge he was rehospitalized for secobarbital intoxication.

It was at this point that he came into psychotherapy. He has not been rehospitalized and at present is maintained on 400 mg. of meprobamate four times daily. Thus, excessive dependency on the physician and habituation to the drug may be a consequence of prolonged administration of a tranquilizer.

Summary and Conclusions

The general practitioner is the first line of defense in managing and controlling mental and emotional illnesses. Tranquilizers do not resolve emotional conflicts but may restore a personality to its previous functioning level or to psychobiological homeostasis in indicated situations. Prolonged or excessive use of tranquilizers should be undertaken with caution as it may lead to an increase in psychiatric symptomatology, excessive dependency on physician or medication, fixation on an organic etiology, defective management of daily affairs, or to a denial of emotional problems. Constant reevaluation of the patient's psychiatric symptomatology and handling of reality situations is indicated when a tranquilizer is administered over an extended period of time.

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A RESIDENCY IN RADIATION THERAPY

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Radiation therapy has not received the consideration it deserves from the physician evaluating the various specialties prior to selecting one for his residency training. This is so because few recognize that radiation therapy exists as a separate specialty in the practice of medicine. It is thought of as only one facet of radiology and is not considered further. While in a sense it is a part of radiology, actually there is a separate certification in radiation therapy issued by the American Board of Radiology. Qualification for examination for certification follows a training period of three years devoted to the arts and sciences of the application of ionizing radiations in the management and treatment of patients with cancer. A fourth year is devoted to practice or further training. The rationale for the separation of the two branches of general radiology and its evolution is thoroughly discussed by Newell[1] and others. Briefly, it is felt that a full knowledge of radiation therapy cannot be obtained from the present training program in general radiology.

Those specifically interested in the cancer problem should note that radiation therapy is primarily concerned with the frustrations attendant to cancer treatment and investigation. Radiation therapy, then, is a clinical specialty, and the therapist is a clinician. Unhappily, it has often been considered as merely a technical service to be administered by someone who understands the production of x-rays but has little knowledge or interest in the problems of cancer patients and the diagnosis and management of their disease. Fortunately this is an anachronism. In certain areas, however, a pioneering spirit is still needed to overcome apathy and habit.

At present radiation therapy is in a vigorous growth period. Supervoltage machines, rotational therapy, and radioisotopes have increased its versatility and applications. Until a breakthrough occurs in the treatment of cancer, we can expect continued growth and usefulness of radiation therapy. It is an uncrowded specialty, with only about 100 full-time practicing clinical therapists. The need for therapists far exceeds their availability, and this lopsided situation is expected to continue.

Residencies in radiation therapy as such do exist. They are to be found in departments and institutions devoted only to radiation therapy, as well as in departments of radiology which will permit the single emphasis in therapy. Admittedly there are few, but the situation is changing. Unlike in many residencies, the grim aspect of financing the training years is diminished because residents in radiation therapy are eligible for training fellowships from the National Cancer Institute and the American Cancer Society.

Function of the Radiation Therapist

What, then, can a resident expect of radiation therapy, and what is the function of the therapist in a department devoted solely to radiation therapy?

As any consultant, the therapist has his own obligations and prerogatives. He is not running a "prescription service." He knows better the capabilities of his therapeutic armament than the referring doctor. The patient is seen on referral or for initial examination if self-referred. A history and physical examination are completed; all records and reports are accumulated and studied; diagnostic and investigative procedures are carried out; and the histology is reviewed. This underscores the necessity of

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determining or confirming the diagnosis and extent of the lesion. Then—and only then—is it ascertained whether radiation therapy should be used and, if so, whether in preference to or in combination with surgery or chemotherapy. If radiation therapy is elected, the type, whether curative or palliative, the dose to be given, and the method of protraction are decided and therapy is initiated. It must be remembered that when radiation therapy is utilized it is an expensive, time-consuming course not without hazard to the patient and requiring careful control to achieve the best results even in palliation.

During the treatment period the management of the disease and the care of the patient, whether as outpatient or hospital patient, is under the supervision and guidance of the therapist. A considerable amount of the therapist's time is spent in the therapy suite supervising the treatment of the patients under his care. This includes setting up new treatment fields and following the treatment that is already in progress for some patients. It is here that one observes the course of the patient and adjusts the treatment plan to the patient. Here complications and reactions are to be observed and cared for. Questions are answered; complaints are evaluated and explained; and psychic support is given always.

After completion of radiation therapy, the patient is not "lost to follow up." He returns periodically to the follow-up clinic for continued observation and management. Long-term follow-up is necessary in order that results can be evaluated and possible complications treated. In this way future treatment programs can, if necessary, be revised, and with continued known good results the application of radiation therapy can be widened.

Aside from having special knowledge of x-ray production and utilization, the therapist must be well acquainted with clinical diagnostic techniques. In evaluating his patients he uses the general examining methods common to all physicians. He must be efficient with the laryngeal and nasopharyngeal mirror, the anoscope, and the proctoscope. He must be expert in regional examinations of the pelvis, abdomen, chest, and nasopharynx. In caring for his patients he often must manage the disease through the terminal phase by judicious use of drugs, fluids, and supportive care.

The modern therapist depends on a close working rapport with various specialties and services. Diagnostic x-rays will be needed, as will biopsies, bronchoscopies, crystoscopies, direct laryngoscopies, etc. Some patients may need surgical procedures prior to treatment or after. It must be emphasized that the therapist is not working in competition with other specialists but in association with them. This association will be rewarding to both the patient and the therapist, because the eclectic process assures the patient of the best therapy and brings new ideas and techniques to the attention of the attending physicians.

Probably one of the most penetrating contacts with other specialties will be that with pathology. The surgical pathological slides must be reviewed and studied separately and then discussed with the pathologist. The therapist must know and appreciate the morphology and histology of the cancers and tissues he treats. He has to know the natural history and radiobiology of cancers and of normal tissues. Because of its importance, a period—usually six months—of the resident's program is spent in pathology. During this time the problems of histology, ecology, and natural history of cancer are introduced by the performance of postmortem examinations and study of surgical specimens. This does not make him a pathologist, but it provides an introduction to the lifelong association the therapist will have with the vagaries of cancer.

Machinery and Principles in Radiation Therapy

Exact physical foundations underlie the machinery and principles used in radiation therapy. A certain minimum knowledge of physics is required. The therapist's contact with physics is on a daily basis, and from this constant exposure he becomes familiar with the necessary principles. Of course there is room for more sophisticated knowledge of physics for individuals with the ability and background. In addition, there is available in the complete department a physicist with whom one can consult when there are perplexing problems of dosimetry and dose. The supervoltage units, with their energy in the millions of electron volts, have increased depth dose and tissue-sparing qualities not yet fully appreciated and awaiting further clinical observation, use, and understanding. Of necessity this demands the clinical guidance of the therapist along with the logistic, technical, and quantitative support of the physicist. During his residency the therapist must have the opportunity of attending lectures on radiation physics. These will give him the foundation for understanding the physical side of his specialty and the relationships between ionizing radiations, energy transfer, and biology.

Often the radiotherapist is called on to direct and supervise the use of radioisotopes. Because of his training and experience with radioactive materials, the therapist is well suited to the job. This follows, since much of the early development of the specialty evolved from the use of radium, and at present intracavitary and tissue implantation of radium is well entrenched in the therapist's armamentarium. Of recent evolution is the widespread use of radioactive cobalt (Co^{60}) in teletherapy units.

Aside from the laboratory and investigational use of radioisotopes, nuclear medicine has provided definite therapeutic applications. Some examples are radiophosphorus in the treatment of leukemia and polycythemia; radiogold and chromic phosphate for intracavitary administration and tissue injection; and, of course, radioiodine for carcinoma of the thyroid. The laboratory and diagnostic possibilities touch on all facets of biology and medicine from cellular metabolism to the localization of tumors; therefore, ample opportunity is provided in the training program to learn the diagnostic and therapeutic techniques indicated.

The clinical side of radiation therapy, permitting abundant and rewarding patient contact, has been emphasized. For those with a research inclination radiation therapy through its disciplines and orientation lends itself well to investigation either in the field of cancer or in radiobiology. The spectrum of problems available ranges from epidemiologic to physical and from clinical to basic. In radiobiology there is a demand to correlate radiochemical events and cellular physiology. It must be stressed that the cancer problem is unsolved; a multitude of opportunities are available; and limitations are decided only by the individual's ingenuity and ability.

By emphasizing that radiation therapy exists as a separate specialty practice of medicine and outlining the scope of the present-day radiotherapist, we have tried in this article to assist the interested physician—particularly the prospective resident—in his evaluation of the specialty.

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TERATOGENIC EFFECTS OF ASIAN INFLUENZA

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That a cause and effect relationship exists between a maternal viral infection during the first trimester of pregnancy and congenital defects in the child remains inconclusive, except in rubella, since most of the studies are of a retrospective type. Introduction of Asian influenza into our population afforded conditions for study of this possible relationship with a greater measure of control and more factors known prior to birth of the infants. In March, April, and May of 1958, hemagglutination-inhibition titers for Asian influenza were determined on 126 expectant mothers whose last menstrual periods occurred in October, November, and December of 1957. Mothers (75) having positive titers were considered to have had influenza and were compared with those (51) having negative results. The two groups of mothers did not differ significantly with respect to the incidence of anomalies among the children delivered, and no definite evidence of a teratogenic effect of Asian influenza virus was found.

The effect of maternal viral infections on the developing embryo has been a subject of interest since Gregg's original observation of the teratogenic effect of rubella.[1] Viruses, other than that in rubella, have not been strongly incriminated as teratogenic agents, although some evidence exists that mumps, influenza, rubeola, varicella, and poliomyelitis may cause anomalies in the human embryo.[2] Other studies indicate that maternal infections with rubeola, poliomyelitis, varicella, and variola may result in termination of pregnancy or neonatal infection but rarely, if ever, in congenital anomalies.[2a] Conclusions are difficult since most studies are retrospective in type, consisting of evaluation of the maternal histories of deformed infants and, therefore, without a completely satisfactory control group for comparison. A recent prospective study[3] has shown that there is a tendency for acute febrile illnesses early in pregnancy to be associated with fetal abnormalities, but neither the type of illness nor the fetal abnormality could be further specified.

The recent exposure of the population to the previously unencountered Asian strain of influenza A virus stimulated the present effort to determine whether any increased incidence of congenital anomalies resulted from maternal Asian influenza.

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Experimental data of Hamburger and Habel,[4] and later of Adams and others,[5] demonstrated that human influenza viruses, when introduced into the early chick embryo, resulted in deformities. Mice inoculated with influenza at the time of mating had increased numbers of fetal abnormalities as well as a decreased pregnancy rate.[5b]

Walker and McKee,[6] studying a group of mothers whose early pregnancy coincided with the Asian influenza epidemic in their area, found an incidence of 3.3% major anomalies within the group and concluded that Asian influenza was not associated with an increased risk of abnormal offspring.

In order to determine the effect of maternal Asian influenza on congenital anomalies among the offspring, the incidence and type of deformities in newborn infants from mothers with known Asian influenza titers (hemagglutination inhibition) were studied nine months after Asian influenza became evident in the Los Angeles County area. Any significant difference in anomalies in newborn infants from mothers with elevated titers as compared with those mothers with negative titers would tend to indicate that maternal Asian influenza influences fetal development.

TABLE 1.—*Hemagglutination-Inhibition Titers from Los Angeles County Prenatal Patients during March, April, and May, 1958*

Titer	Patients, No.
Negative	180
Positive	
1:5	176
1:10	47
1:15	72
1:20	120
1:30	54
1:40	57
1:60	13
1:80	14
1:160	4
1:320	1
Total positive	558
Total positive and negative	738

Method of Study

During March, April, and May, 1958, single blood specimens were drawn from Los Angeles County prenatal registrants whose latest menstruation dated conception during October, November, or December, 1957—the period in which an epidemic of Asian influenza was first recognized in Los Angeles.[7] All the selected women planned to deliver at Los Angeles County Hospital.

Hemagglutination-inhibition (HI) titers were determined by use of the procedure described by Salk.[8] The hemagglutination antigen used throughout this study was pooled allantoic fluid influenza A/Asian/Japan/305/57. Each serum sample was treated with periodate before testing.[9]

Since blood specimens were drawn throughout the second trimester of pregnancy, a few mothers with influenza contact after the first trimester may have been included. Other limitations resulting from the availability of only one blood specimen were also present. Infection could have occurred before the first trimester in a few women who retained a positive antibody titer for four months or longer. Nonspecific titer elevations were felt to be less significant since the population had not previously been exposed to the virus of Asian influenza.

TABLE 2.—*Association of* [illegible] *with History of "Flu-like* [illegible]

Symptoms	Titers Neg.	1:5	1:15	1:20	1:30	1:40	1:60	1:80	Total
Influenza	18	2	2	7	5	5	..	1	40
Family contact with "flu" and cold	1	..	..	..	1	..	..	..	2
Family contact with "flu," but no symptoms of illness	2	1	..	..	..	..	..	..	3
Influenza vaccine given; no illness	..	..	..	1	..	..	1	..	2
Few colds (1 or 2)	9	4	4	10	2	3	..	1	33
Frequent colds (3 or more)	5	..	..	2	..	..	..	..	7
Fever or myalgia	2	2	..	..	..	1	..	..	5
Diarrhea	2	..	..	..	1	..	..	..	3
No febrile, respiratory, or gastrointestinal symptoms	12	2	2	4	5	3	1	1	30
Unknown	..	..	..	1	..	..	..	..	1
Total	51	11	8	25	14	12	2	3	126

Newborn infants from mothers with positive HI titers (experimental group) and from mothers with negative HI titers (control group) were studied. A single pediatric resident assigned under the supervision of a qualified pediatrician interviewed all obstetric admissions from the control group and experimental group and examined all infants born to these mothers. Individual patient titers were unknown to either the pediatric resident or the pediatrician.

TABLE 3.—*Maternal Hemagglutination-Inhibition Titer Related to Characteristics of Infants*

Characteristics	Titers Neg.	1:5	1:15	1:20	1:30	1:40	1:60	1:80	Total
Term Infants									
Normal	45	11	6	21	11	13	2	3	112
Amyotonia (questionable)	1	..	..	..	..	..	..	..	1
Twins*	..	..	..	..	1	..	..	..	1
Total	46	11	6	21	12	13	2	3	114
Premature Infants									
Normal	2	..	1	2	1	..	..	..	6
Twins*	2	..	..	..	..	..	..	..	2
Anencephaly and stillborn	..	1	..	1	..	..	..	..	2
Stillborn (only)	..	..	..	1	..	..	..	..	1
Cleft palate	1	..	..	..	..	..	..	..	1
Total	5	1	1	4	1	0	0	0	12
Total	51	12	7	25	13	13	2	3	126

* Twins tabulated as one birth.

Congenital anomalies of a major type were included in the study, according to the suggestions of Davis and Potter.[10] Minor conditions such as nevus flammeus, undescended testes, mongolian blue spots, skin tags, hydroceles, and umbilical hernias were not included.

Results

HI titers were obtained from 738 pregnant women in the prenatal clinics. From this number, a list of 377 was selected by including highest titer-reacting and negative titer-reacting women reasonably certain of delivering at Los Angeles County Hospital. A final total of 126 mothers were interviewed at Los Angeles County Hospital. The infants born to these mothers were examined in the nursery. The relatively small number seen in the hospital was due to a number of factors, such as changes in delivery plans, surname changes, and failure of notification by the admission office that a study mother had been admitted.

TABLE 4.—*Maternal Titer Related to Characteristics of Infants*

Maternal Titer	Total No.	Abnormalities, Including Twins* and Stillbirths		Abnormalities, Excluding Twins* and Normal Stillbirths		Normal Prematures, Excluding Twins and Stillbirths		All Prematures	
		No.	%	No.	%	No.	%	No.	%
Negative Titer	51	4	7.8	2†	3.9	2	3.9	5	9.8
Positive Titer	75	4	5.3	2‡	2.7	4	5.3	7	9.3
Total	126	8	6.3	4	3.2	6	4.8	12	9.5

* Twins counted as one pregnancy product.
† One familial cleft palate; one possible amyotonia.
‡ Anencephaly

The distribution of HI titers for Asian influenza obtained from the prenatal patients is listed in table 1. It was of interest to determine how well influenza titers correlated with the history of influenza, influenza-like symptoms, or close contact with influenza in the absence of illness. For this purpose influenza was arbitrarily defined as (1) fever, myalgia or headache, and sore throat or cough or (2) influenza diagnosed by a doctor. It is apparent from table 2 that history of illness showed only a chance relationship to influenza titer. Physician-diagnosed influenza as well was not significantly related to titer. No characteristic of the history of illness, including the time period in which the illness occurred, was related to the obtained titer values. The usual difficulties in obtaining retrospective histories of illness and symptoms must be kept in mind.

TABLE 5.—*Complications of Maternal Pregnancy for Four Infants with Anomalies*

Infant					
Sex	Weight, Gm.	Anomaly	Illness in First Trimester	Other Abnormality of Pregnancy	HI Titer (Maternal)
M	2,100	Cleft palate	None	None	Negative
M	4,000	Amyotonia (?)	None	None	Negative
F	1,300	Anencephaly	Cough, sore throat and fever for three days	None	1:20
F	1,670	Anencephaly	Coryza and cough for four days	Polyhydramnios	1:5

The outcome of pregnancy in the mothers in the study is summarized in tables 3 and 4. The incidence of abnormalities, including twin births and stillbirth, in the total group was 6.3%. Twin births are counted as one abnormality. Six of the eight abnormal births were also premature. Excluding twin births and otherwise normal stillbirths, the incidence of gross congenital anomalies was 3%.

The incidence of abnormal births and of congenital anomalies did not differ significantly in the experimental as compared with the control group. Within the group of mothers with positive titers, higher titers were not related to an increased incidence of birth abnormalities, including congenital anomalies.

A prematurity rate of 9.5% was found for the combined total group. The incidence of prematurity at Los Angeles County Hospital was 11.2% in 1956 and 12.6% in 1957. Although the 1958 rate is not as yet available, the prematurity rate does not appear to have been adversely affected by Asian influenza in this area. Mothers with negative titers did not differ significantly in incidence of prematurity from those with positive titers.

The congenital anomalies were anencephaly in two infants, cleft palate in one, and generalized hypotonia in one. The latter infant was given a diagnosis of possible amyotonia, but without diagnostic clarification by follow-up visits. The infant with a cleft palate had a sibling with the same anomaly, and so there remains the possibility of a genetic background. Anencephaly, occurring twice in the small group sampled, was found on both occasions in infants born to mothers with positive, although relatively low, titers. The mothers of the anencephalic infants gave a history of a "cold" in the third month of pregnancy, associated with a three-day fever in one (1:20 titer) and unassociated with systemic symptoms in the other (1:5 titer). Maternal and family characteristics of the infants with congenital anomalies are found in tables 5 and 6.

TABLE 6.—*Family Characteristics of Four Infants with Congenital Anomalies*

Anomaly	Age		Maternal Gravidity	Abnormal Previous Pregnancies	Family Anomalies
	Maternal	Paternal			
Cleft palate	37	40	11	3 premature 1 spontaneous abortion	Cleft palate in one sibling
Amyotonia (?)	18	23	3	None	None
Anencephaly	20	24	2	None	None
Anencephaly	22	26	2	None	None

The control and experimental groups did not differ in neonatal morbidity and mortality rates, or in incidence of macrosomatia (weight greater than 4,550 Gm. [10 lb.]), dysmaturity, physiological jaundice, or hemolytic disease of the newborn. One infant of each group had a questionably significant murmur which disappeared on later examination and remained unassociated with signs of cardiac disease.

Summary

No significant teratogenic effect of Asian influenza was demonstrated in a study in which newborn infants of mothers with positive hemagglutination-inhibition (HI) titers were compared with infants of mothers with negative titers. However, of the two infants with congenital anomalies found in the control group, one with a cleft palate possibly had a genetic background for the anomaly and the other had only a presumptive diagnosis of amyotonia. The only other congenital anomaly, anencephaly, was found in two infants of the experimental group. Only speculation is possible regarding the significance of this occurrence.

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PEDIATRICS IN THE SPACE AGE

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Those of us who can still remember the horse and buggy days, who have succeeded in living through the automotive age, and who have taken the atomic and jet ages in stride can hardly refrain from speculating on the future of pediatrics in the space age, which we are now entering. What advances will there be in the science of pediatrics? What changes will there be in the practice of pediatrics?

A Backward Look

Perhaps we can get a better perspective of what lies ahead by looking backward. At the turn of the last century, if someone had said that in 1959 it would be relatively simple to have breakfast in Paris, lunch in New York, and a round of golf in Miami all in the same day, we would have said that he was out of touch with reality. We probably would have called for the wagon and the men in the white coats. It is no more fantastic to assume that at the next turn of the century we will be spending week-ends on Mars and spending our summer vacations on Venus.

Changes in both the science and the practice of medicine since the beginning of the century have been equally dramatic. Diseases which were considered inevitable have disappeared. Surgical procedures beyond the flight of fancy are now routine. Drugs, which we still call miracle, are in every physician's bag. Moreover, there is every reason to believe that this is only the beginning.

Chairman's address, read before the Section on Pediatrics at the 108th Annual Meeting of the American Medical Association, Atlantic City, June 9, 1959.

It is just 40 years since the end of World War I, when I began to practice pediatrics. At that time the pediatrician was chiefly occupied with the treatment of sick children and what was called infant feeding. Little attention was paid to growth and development and even less to mental hygiene and the emotional problems of children. Vitamins were still in the laboratory stage. Vaccination for smallpox was the only routine immunizing procedure.

A farseeing prophet in 1919 could have said to a young man entering practice: "If you are still practicing in 1959, here are some interesting facts: 1. You will not have seen a clinical case of diphtheria or tetanus for 25 years. 2. A suitable formula for 99 out of 100 babies can be purchased in a can at any drug store or supermarket. 3. Rickets, scurvy, and infantile tetany will be textbook diseases that you will rarely, if ever, see in private practice. 4. It will be at least 15 years since you have seen a patient with surgical mastoiditis. 5. Most cases of pneumonia and scarlet fever will be treated in your office and will be essentially cured in 24 hours. 6. Very few babies will die of diarrhea because of what you have learned about electrolyte and water metabolism."

The young man might have answered that he could see little sense in going into pediatrics, since all the major problems will soon be solved. This is reminiscent of the well-known professor of physics at one of our major universities, who in the year 1894 advised his students not to go into physics as all essential facts were known. If he came back today, it would take him a little while to catch up on his homework.

A Forward Look

All science, of which medicine is a major segment, is like the multiheaded hydra. Each time one problem is solved, two new ones arise to take its place. Each discovery, while answering some old question, broadens our horizon so that we constantly see new and more complex problems. An excellent example of this is the recent discovery of the steroids, which has opened up fields of investigation that will take decades to explore. The more we learn, the more is seen that we do not understand.

As for pediatrics, instead of disappearing, both the science and the practice have increased a hundredfold. If the same prophet could again make his predictions in 1959 as to what medicine will be like 40 years hence, perhaps he could say: "1. Cancer and leukemia will have been relegated to medical history. 2. The 'common cold' will have been forgotten. 3. Babies will rarely be born prematurely. 4. A simple explanation and method of control will have been found for allergy. 5. A single injection or pill will immunize children against all of the communicable diseases. 6. Many congenital defects will be avoided by a better understanding of genetics. 7. Such metabolic diseases as diabetes, arthritis, and cystic fibrosis will be easily controlled by improved knowledge of the enzyme system."

I am sure this is only a small fraction of what will actually transpire. Where will pediatrics fit into this framework of ever accelerating progress? Surely no one will question that, in spite of phenomenal advances, the science of pediatrics is still in its infancy. Each month our journals are bulging with the reports of significant investigation. Hundreds of bright young men are dedicating their lives to this field of endeavor.

Attitudes in Pediatrics

Recently, however, there have been rumblings that the practice of pediatrics is on the decline. Various allegations have been made: 1. The newer pediatrics does not lend itself to everyday practice. 2. Pediatric diagnosis and treatment are either so complex that they require highly specialized institutional care or so simple that they can be handled by any general practitioner. 3. Pediatric practice is uninteresting and boring because so much of it is routine and monotonous.

With this I do not concur. Those who entertain these views have about the same foresight as the previously mentioned physics professor. Of what value is medical progress if it is not applicable to the everyday care and welfare of the patient. The science of medicine is useless except as it improves the practice. I cannot believe that anything of real merit is beyond the comprehension of the average physician or his ability to apply it.

I do not understand what is meant by "the newer pediatrics." If we mean exact diagnosis and definitive management in the fields of cardiology, metabolism, hematology, and endocrinology, no one can be competent in all of these areas. But this is not the practice of pediatrics. The practitioner must have enough knowledge of these subjects to recognize them and consult with, or refer them to, appropriate authority. This is the function of the hospital, the clinic, or the teaching center. These facilities occupy the same relation to the practitioner as do the roentgenologist or the clinical laboratory. These subspecialists are comparable to technicians, who are called in to do a special job. It constitutes a very minor part of daily practice.

Those who find pediatrics monotonous and boring are practicing with their eyes shut. They are lacking in awareness of what pediatrics is. They are miscast and should be in some other type of work. Of the thousands of times I have discussed with a young mother her perfectly normal baby, I have never once found it boring. She may have memorized Dr. Spock's excellent book from cover to cover, but she needs something more, the personal touch. It is gratifying to feel that you are giving this mother confidence and starting a new family off in the right direction. It is not as dramatic as a cardiac catheterization, but it is more basic and in the long run more important.

Pediatrics has never been a specialty in the strict sense. It is general practice confined to an age group. It is impossible to practice competent pediatrics without sound grounding in almost every field of medicine. There has sometimes been a tendency for the specialist to look with condescension on the general practitioner. I suspect that those who, looking down from their ivory tower, question whether the "newer pediatrics" can be practiced, fall in this category. This is wrong. Almost anyone of normal intelligence can become an expert in a given field if he devotes his whole time to it, but to become a good general practitioner requires not only broad knowledge but also strength of character and a deep understanding of human relations. When Mrs. Smith's child is taken sick on Saturday night she does not want an appointment with the hematologist on Monday morning; she wants a doctor and she wants him now.

Influence of the Pediatrician

Our present resident-training programs teach the young physician much about disease. Unfortunately few of them teach him much about how to be a physician, which is something entirely different. This he must learn for himself, if he can, often the hard way. Some of the dissatisfaction of younger pediatricians with private practice is due to this. It is a major defect in our training program. We must think of the pediatrician as the child's physician, not merely as one who treats the diseases of childhood. For this I can see nothing but a constantly expanding need.

The revolutionary advance in science in this century has greatly modified our environment but has done little to change the human race. Advance in technology has not lessened but rather increased the political and economic tensions between nations. We are no nearer universal peace than ever. Intolerance, prejudice, and bigotry shown no sign of regression. Likewise, progress in medical science, while doing much to conserve and prolong life, has done little to make life better. In fact, we have failed miserably in this regard as witness the disgraceful incidence of divorce, the steady rise of juvenile delinquency, the appalling amount of mental illness, and the general deterioration of the American home. Responsibility for this state of affairs lies in many areas, but the role of medicine is most important.

The pediatrician is in a unique position to exert a powerful influence. He sees life from its beginning. He can do much to guide the mental and emotional development of the child. More than other physicians he is likely to see parents as they really are and be able to recognize and advise on family problems. Juvenile delinquency is not a problem of adolescence but has its inception in earliest life. Many of the emotional and psychiatric problems of adult life stem from a disturbed childhood. Here lies a challenge to pediatrics which is now poorly met. We will fail in our mission as physicians if we do not rise to it. If there is a "newer pediatrics," this is it. The technical achievements of the space age will not be worth much unless the human race makes somewhere near parallel progress.

The only serious uncertainty about the future of the practice of pediatrics has nothing to do with medicine but arises from the changing economic and political climate of our society. What has been a creeping socialization of medicine has developed into a vigorous crawl. The federal government is considering taking over all hospitalization insurance. Group practice and closed-panel practice on a contractual basis are growing steadily. Even Blue Shield, "the doctor's plan" of prepaid medical care, is becoming more and more inclusive. In some areas it threatens to outsocialize the socialists. Third-party intrusion into the patient-physician relationship is disturbing.

The areas of medicine that are largely technical or that deal with the treatment of acute disease may lend themselves to this type of practice, but it is difficult to see how pediatrics can be practiced in any such framework. Pediatric service is not a commodity that can be purchased over the counter like a pound of coffee. Pediatrics does not lend itself to production-line methods. In no other field of medicine is the personal element so important. Somehow in the changing social order this relationship must be not only preserved but furthered. This is something that we must fight for, not to preserve the private practice of medicine but for the welfare of children.

Where then will pediatrics go in this space age? There can be little doubt that the science of pediatrics will be a component of the same rocket that will carry all science to new and unexplored heights. Since the purpose of this rocket is to transport a useful pay load, it is obvious that the practice of pediatrics will of necessity be in the nose cone.

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MEDICINE AND THE LAW—RETROSPECT AND PROSPECT

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The administration of justice in cases involving medical questions is hampered by indifference to the subject of medical jurisprudence in medical schools and by persistence of medieval notions on medical subjects among legislators and jurists. Ignorance of the effects of psychic trauma and organic brain disease still confuses every discussion of criminal responsibility, and anachronistic laws still result in flagrant injustices. A recent case illustrates the impossibility of predicting whether a psychiatrist will report that the accused knew the difference between right and wrong at the time of the alleged crime. In one experiment involving the employees of 16 chain stores a program involving the use of a polygraph reduced the number of admitted cases of dishonesty from 76% to 4%. Science has provided the tools for a vast improvement in the understanding and control of human behavior. These tools should be used to insure fairness in the treatment of mentally sick people, and it is up to society, including the medical profession, to make sure that they are used.

Across the façade of a new western courthouse is carved this inscription, "For what is so important as the administration of justice?" When Alexander Hamilton wrote these words nearly two centuries ago he could not have foreseen the enormous role that medical science was to assume in the judicial process. At that time legal medicine was in its infancy and the tools it had to work with were few and uncertain.

With respect to the history of this subject, while Galen wrote a treatise on simulation and malingering in the second century, there is no record that such knowledge was ever applied by doctors in court. Actually, legal medicine is a very late product of civilization.

One of the first treatises in English on medical jurisprudence was written in 1788 by Farr, who undertook to define it in these terms: "It is a kind of medical knowledge which is not so much concerned in the cure of disease as in the detection of error and the conviction of guilt." Many years later another author expressed the thought more clearly: "Medical jurisprudence or legal or forensic medicine, as it is sometimes called, may be defined to be the science which applies the knowledge of medicine to the requirements of law."

For four centuries prior to the time that colonists from Britain and Western Europe started to settle in North America in the 17th century, the English people had been struggling for democratic government and particularly toward establishing the rights of the individual as against the imperialism of the state. Subsequently, when in large measure the English legal system was adopted in the colonies and the common law became the backbone of our judicial processes, we inherited from Great Britain laws conspicuous for the absence of provisions to apply medical knowledge to the administration of justice. In large measure our laws continue to be hostile to medical jurisprudence. Britain during the 19th century made great advances in this field and established chairs of legal medicine in all its leading medical schools. However, in the United States, in only a few places have the states yet made any demand for competent medical experts to come to the aid of the law.

From the English we inherited the coroner system of medicolegal examinations, and in most parts of the United States the coroner is still the official who is entrusted with that important function. Possessing neither medical nor legal knowledge, which would seem to be a basic requirement, this official survives solely on political popularity—a qualification which a real medical expert is not likely to possess. Oddly enough, the office of coroner is not a product of the political turmoil and Renaissance in England but has survived almost unchanged from the monarchy of the Middle Ages before the days of the Magna Charta and the crusades.

Another adjunct of this system is the outmoded and antiquated coroner's inquest—a tribunal in which a jury of six persons is charged with the determination of the cause of death and naming the person responsible. Generally the first six persons on the nearest park bench are chosen and they take a quick glance at the remains through an open door and listen to what evidence the coroner has at hand. This procedure seems to be founded on the theory that ignorance multiplied by six equals intelligence.

The leading author on medical jurisprudence in the United States a century ago, Dr. Stanford Emerson Chaillé, pointed out that legal medicine owes its power to knowledge derived from every branch of the science of medicine, but the law determines how far that power should be utilized in the administration of justice. Consequently, the development of medical jurisprudence has varied in different nations with the progress of medical

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science and with the extent of its application to the protection of life, reputation, and property. Efficiency in the legal application varies with the appreciation of medical knowledge by the rulers of a nation. This resulted in the fact that the law is more favorable to the development of legal medicine in nations which were ruled by the educated few than in democracies, where sovereignty is derived from the people.

Even today we are confronted with numerous examples of purely scientific matters being decided by public forums and political processes. For instance, consider the common situation in which a city wants to improve the health of its people by adding fluorine to its water supply. This is a question which has long since passed from the realm of scientific dispute, yet the matter is generally decided on the basis of letters to the editor and political expediency characterized by the most vociferous arguments being furnished by the most ignorant. The question of the abolition of capital punishment, the problem of juvenile delinquency, and the considerations related to controlling crime and rehabilitating criminals fall largely in the same category.

Birth of Legal Medicine

The birth of the modern concept of legal medicine seems to have occurred as a consequence of the Renaissance in Italy, and, as this new enlightenment spread to other countries of Western Europe, legal medicine became most deeply rooted in the Germanic countries. Starting in 1532, these nations took steps to establish a sound system of legal medicine and have been predominant in the field ever since. In 1650 Michaelis delivered the first lecture on legal medicine at the University of Leipzig, and as early as 1720 professorships in this science were founded by the state. At about the same time France also enacted laws which favored the growth of legal medicine, but in 1692 medicolegal offices became hereditary and the science languished until after the French Revolution.

During the 17th and 18th centuries the authority of Zacchias was supreme in this field, and it is interesting to take note of the principal problems with which he was concerned. He devoted chapters to such subjects as torture, sorcery, prophecy, and miracles. During this period doctors gravely discussed whether a woman could be got with child by the devil or by a dream and French judges legitimized an infant, when the husband had been separated four years from the mother, on the grounds that the child owed its paternity to a dream. It was generally taught that grossly deformed infants had a bestial parentage. The effect on a suspected murderer of touching the body of his supposed victim continued to be a legal expedient within the 19th century. Until 1726 cruentation was firmly established in medicolegal practice. It consisted in the belief that in the presence of the murderer the wounds of the corpse, no matter how long dead, would open and bleed afresh. Courts accepted the testimony of medical experts to this miraculous phenomenon.

Medicolegal autopsies were denounced until about 1750, and the work of Morgagni, the father of morbid anatomy, which is a foundation stone of legal medicine, was not published until 1761. So great was the helplessness of the science of legal medicine that a horrible atmosphere of suspicion encompassed the fear of death by poison. On those who were even suspected, the grossest legal abuses were everywhere inflicted, while those who were convicted were boiled alive by the English and burned by the French. The medicolegal authorities Paré, Zacchias, Hoffman, and others taught belief in ghosts, witches, and possession by the devil and united with the clergy in denouncing all disbelievers as heretics and atheists. The distinguished expert Hoffman condemned all those as witches who "vomited nails, hair, wax, glass or leather." Thus did the legal medicine of our ancestors only a few generations removed persecute, drown, and burn thousands of insane persons as "firebrands of hell" who are "moved and seduced by the instigation of the devil."

With the impotence of science to aid the law it adopted miracles as explanations, suspicion as proof, confession as guilt, and "torture as the chief witness"—the medical expert being summoned only to sustain the accused until the rack forced his confession.

Growth of Science and Legal Medicine

Just as the practice of medicine was an art long before it became a science, legal medicine began to contribute to the administration of justice only after the science of medicine began to develop. A hundred years ago most of the scientific measures now used in helping the law in the determination of the facts of a case were either undeveloped or totally unknown. Chemistry was in its infancy, as was pathology. Bacteria and viruses as a cause of disease were not even suspected, and the magic of the x-ray was undreamed of. The value of the microscope was not appreciated, and most of our everyday diagnostic equipment was still waiting for the inventor to uncover it. But, since there always seems to be a lag between scientific achievement and the adoption of its use in matters of law, legal medicine was years behind in the scientific parade.

In the United States the first chair of medical jurisprudence was established by the College of Physicians and Surgeons in New York in 1813. Two years later Harvard and the College of Physicians and Surgeons of the Western District of New York started instruction in legal medicine by professors of other branches. Since that time instruction in that branch in our medical schools has been spotty. Many give only token courses in this subject and some none whatever. In others the lectures consist of recitations by an old and grizzled coroner of interesting murder cases he was involved in decades before. In many schools the main object of the course seems to be to furnish entertainment rather than enlightenment. Not until 1937, when one was established at Harvard, did any medical school have a full-scale department of legal medicine. In the last two decades a few other schools have recognized the importance of the subject and followed the lead established in Boston. The failure of the medical schools themselves to appreciate the importance of the subject is one of the principal reasons that only at this late date is the importance of legal medicine beginning to be recognized.

Only a short time ago, when the American Medical Association was preparing a new medical directory, I was sent a card on which to supply certain information, including my specialty. There was no place on the card to indicate the subject of legal medicine. I therefore wrote saying that for several years I had devoted my full time to the practice of this specialty and would appreciate having the directory so indicate. By return mail I received a reply that the A. M. A. did not recognize that there was such a specialty, although for years THE JOURNAL has carried a column on that subject.

In 1815 Dr. T. R. Beck was appointed to give instruction in legal medicine at the Western New York School. He was the author of Beck's "Medical Jurisprudence," which first appeared in 1823. This book was so highly regarded and popular that for many years it was the classic on the subject and went through many editions, not only in this country but in Europe as well. The various subjects covered include feigned diseases, disqualifying diseases, impotence and sterility, doubtful sex, rape, pregnancy, delivery, infanticide, legitimacy, presumption of survivorship, age and identity, mental alienation, persons found dead, wounds on the living body, and poisons.

Psychiatry and the Law

Changes in the laws regarding insanity were initiated largely as a result of the problem of suicide in England. Under the old English law suicide was a felony, and the law required that a suicide be buried in the highway with a stake driven through the body and that his property be confiscated. Juries were more humane than the law and generally decided that suicides were insane and therefore irresponsible. Not until 1823 was this law rescinded, and the same year Beck congratulated the United States that "we do not war on the dead in this country."

In the United States, Maine took the lead in 1847 in enacting legislation to protect the insane person accused of crime. It provided that "any judge of the court before which he is to be tried, when a plea of insanity is made in court, or he is notified that it will be made, may order such person into the care of the superintendent of the insane hospital, to be detained and observed by him until the further order of the court, that the truth or falsity of the plea may be ascertained."

Until 1800 the test of sanity under Anglo-American criminal law was that he alone should be judged insane who was "totally deprived of his understanding and memory and did not know what he was doing any more than an infant, than a brute or wild beast." In 1812 it was decided that the correct test was whether the criminal had generally the power to distinguish right from wrong. Since 1843 in England and largely in the United States the test has been that at the moment the crime was committed the accused had a sufficient degree of reason to know that he was doing an act which was wrong.

Oddly enough, in spite of the tremendous advances made by psychiatry in the diagnosis and prognosis of mental illness, there has been no radical change in this yardstick of criminal responsibility.

In England in January, 1843, a man by the name of McNaghten was acquitted on a charge of murder on the grounds that he was insane. This verdict caused such a furor in the House of Lords that it resulted in a decision to have the 15 judges of the realm clarify the laws regarding criminal responsibility and mental illness. After considering the many angles of the problem, the judges propounded the rule that the test should be "whether the accused at the time of doing the act knew the difference between right and wrong." Kozol, in a masterly dissertation on this rule, states, "the authority of the McNaghten opinion appears to have done more to retard the advance of criminal justice in cases of homicide than all other factors combined." Nevertheless, that rule is still in force in virtually all states today.

Recently I was a witness at a trial for murder. The accused was a 23-year-old Negro boy who was charged with the murder of a police officer. He admitted that the police officer had suffered a nonfatal gunshot wound while he and the officer were struggling for a revolver. Seconds later another police officer in a car a short distance away started firing at the boy through the windshield of his car. Simultaneously the victim received a bullet through the head which, in all probability, was fired by the second police officer.

The court appointed a psychiatrist to examine the accused, and his report was most interesting. The boy had been born on a southern plantation and at a very early age the family had been abandoned by the father. The boy was sent to live with another family that had 13 children, and he had to sleep in a small room with six other persons. His mother moved to the West Coast, where, after a year or two, the boy joined her. She worked all day as a janitress, and he had little or no supervision.

This woman had a number of children by assorted fathers, most of whom were unknown. It is not surprising that he got into trouble at an early age. He had been in and out of numerous jails, prisons, boys' homes, and psychopathic hospitals. Psychological examinations revealed that he had an IQ of 54. He had not been involved in any vicious crimes but had been arrested many times for shoplifting, stealing bicycles, drunkenness, and comparatively minor offenses.

The psychiatrist's report revealed a most sordid story of impossible living conditions, neglect and abandonment of the boy by his parents, and inability to get a job because of his record or to hold one after he did find work. During the trial this boy repeatedly volunteered statements against his own interest, and his general conduct indicated to me that he had little concept of what he was facing. However, the psychiatrist's report ended with the usual statement that at the time of the alleged crime the accused knew the difference between right and wrong. It is not surprising that he was found guilty of first-degree murder.

Is it too deep in the field of wishful thinking to hope that before long society, with the aid of legal medicine, can prevent such occurrences as this double catastrophe—the death of the police officer and the mutilation of the life of this boy?

The first breakthrough of the ironclad McNaghten rules occurred in 1954 in the United States Court of Appeals for the District of Columbia. The accused was Monte Durham, who was charged with housebreaking, and he had a history remarkably similar to that of the boy just mentioned. In this case the court ruled "that the accused is not criminally responsible if the unlawful act was the product of mental disease or mental defect," and consequently the conviction of Durham was reversed.

This decision has received the enthusiastic approval of psychiatrists. Associate Justice Douglas of the Supreme Court noted with approval, "after the Durham case, as before, the jury has the final say. The jury evaluates the psychiatrist's testimony, as it does the evidence on every other factual issue. . . . No one theory of psychiatry is turned into a principle of law. [The psychiatrist] will be free to present his testimony about the mental condition of the accused in concepts that are familiar to him and medically realistic."

Future of Medical Jurisprudence

What of the future? A quizzical eyebrow might be raised as to why a paper on medical jurisprudence appears in a session on preventive medicine. The science of healing has taken thousands of years to pass through the various stages of recognition of disease, diagnosis, and treatment. The prevention of illness is the highest hope to which our profession can aspire. Legal medicine is now entering the stage where its special abilities can be employed to promote the administration of justice by preventing crime and accurately assessing criminal and civil responsibility. I shall offer just one illustration.

The polygraph is a scientific instrument based on sound psychological and physiological principles, and one of its major fields of usefulness lies in the prevention of theft and embezzlement.

Huge numbers of persons are employed in stores, banks, and other commercial institutions where they are constantly in contact with and handling merchandise and money which does not belong to them. We have not yet developed the concept that, to these employees, temptation to steal is an industrial hazard, just as electrocution is an industrial hazard to the lineman. When polygraph tests have been given to all of the employees of department stores, banks, and such institutions, the percentage who admit the theft of money or merchandise or shortchanging customers is astounding. In one series of tests involving all the employees of a group of 16 chain stores, 76% of the employees admitted one or more of the above derelictions.

None of these persons was discharged, but they were told that the test would be repeated in a year. On this occasion it was amazing to find that the percentage of derelict employees had dropped to 4. If all such employees were given a personnel examination which included a polygraph test as a preemployment measure, and if routine tests on all employees were conducted at regular intervals thereafter, I am convinced that theft and embezzlement would cease to be a problem. The money saved by the employer is, in my opinion, the least of the benefits derived. The real achievement is that the industrial hazard of temptation has been canceled and a previously honest person has been saved from becoming a thief.

All of the multiplicity of branches of scientific medicine are advancing at a headlong rate. New drugs are appearing in such profusion that before we learn how to spell the names of them they have become obsolete and others with unpronounceable names have taken their place. Diagnostic and surgical procedures which are commonplace events were undreamed of only 10 years ago. Slowly but surely the laws are being molded to make use of this vast expanse of scientific knowledge in the administration of justice. As people generally become aware of these advances the laws ultimately have to conform to encompass and use new and more reliable information. Laws never create public opinion, but laws sooner or later always have to conform to public opinion, just as the McNaghten rules are giving way to the enlightened concepts of psychiatry.

Comment

In traveling about the country one cannot fail to notice that all of the older courthouses have one thing in common—a symbolic statue of Justice. It may be over the front entrance or on the cupola, but invariably it is present. Justice is depicted as a

Roman goddess with long, flowing draperies. She is blindfolded. Held aloft in one hand is a pair of scales which generally are somewhat tilted, and in the other hand is grasped the two-edged sword of retribution.

With the enlightenment of modern science and the helpfulness that legal medicine now has available, is it not time to revise this concept of Justice? I would suggest that in place of the Roman goddess we substitute a trim, intelligent young woman wearing a laboratory coat. I would remove the blindfold. Is there any reason why Justice should not see and observe as well as listen? Is not a witness giving testimony before a jury judged as much by his appearance, his manner of speaking, and the shrug of the shoulder as by what he says?

In place of the old scales let us substitute a modern analytical balance which can weigh the tiniest grain of sand with complete accuracy, and in place of the two-edged sword of retribution let us recognize that science now offers a humane, intelligent approach to rehabilitation.

Science has provided the tools; it is up to society to see that the law uses them: "For what is so important as the administration of justice?"

325 Valley View Dr.

CLINICAL TRANSFORMATIONS IN PSYCHIATRY AND PSYCHOANALYSIS

Gregory Zilboorg,† M.D., New York

Psychoanalysis was originally distinct and isolated from clinical psychiatry. European psychoanalysts rarely had university connections, were little interested in custodial intramural psychiatry, and preferred to deal with neurotic rather than psychotic patients. In the United States there has been a synthesis of clinical psychiatry with psychoanalysis, and the latter is well represented in university medical schools. The synthesis was accelerated by World War II, and there is a trend toward establishing the biopsychological unity of the human person. The future of this synthesis remains unclear, however, and the responsibility for establishing the scientific status of psychoanalysis will rest on the shoulders of the clinical workers in this country.

A proper appraisal of the reciprocal influences between psychoanalysis and psychiatry is not yet possible; only the general trends of a possible historical perspective will be outlined here. For today, 103 years after Freud's birth and about 20 years after his death, the true medicopsychological role of psychoanalysis still appears uncertain. World War II must have played a serious role in making so many things uncertain, and many things scientific and medical have fallen victim to the widespread uncertainty.

Psychoanalysis and Clinical Psychiatry

In the 20's of this century psychoanalysis, while at one of its heights of development, still remained more or less isolated from clinical psychiatry. The centers of psychoanalysis and psychoanalytic education were in Vienna and Berlin. The medical profession as a whole was academically and scientifically removed from the psychoanalytic clinicians and theoreticians. However, there were a few isolated persons whose contact with clinical psychiatry was close, at least intermittently, although their main preoccupation was with psychoanalysis. Among these the names of Abraham, Wittels, Simmel, and Nunberg ought to be mentioned. Abraham was trained in Burghölzli under Eugen Bleuler; Simmel was interested in the intramural psychoanalytic treatment of patients who were nearly psychotic. However, psychoanalysis as a whole was not interested in clinical psychiatry; its chosen and self-limited field was that of *neurosis. Psychoses could* perhaps be "understood" psychologically, but the field of psychosis was considered as belonging to custodial intramural psychiatry. Psychiatry was considered "academic"—old, static, and generally unproductive—despite the contributions of Eugen Bleuler, who definitely acknowledged his debt to psychoanalysis, or later those of Schilder and Ernst Kretschmer.

Reference has been made here almost exclusively to German-speaking sources. In England psychoanalysis was still in its early stages of development and, as if following the German tradition, it at first stood quite apart from clinical psychiatry. (One must add that clinical psychiatry invariably responded in kind and in isolationist fervor.) As to France, the wounds of World War I delayed the spreading of psychoanalysis into that country until almost the end of the 20's—and the delay was also

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†Dr. Zilboorg died Sept. 17, 1959.

on the basis of mutual and reciprocal scientific isolationism, as far as the psychiatric traditions were concerned.

The picture in the United States presented almost entirely different aspects. The first to try out, or tentatively to test, the new ideas of psychoanalysis were such seasoned and well-schooled psychiatrists as Charles Macfie Campbell and August Hoch, in the early days of the century, in what was then known as Bloomingdale Hospital, now the Westchester Division of the New York Hospital. A little later John T. McCurdy presented the first attempt in this country to lay the groundwork of "dynamic psychology." One of the assistants of the neurologist Frederick Peterson became the well-known pioneer of psychoanalysis in America, A. A. Brill. Among the founders and charter members of the first psychoanalytic society in America one finds the names of Adolf Meyer, Louis Casamajor, Smith Ely Jelliffe, and William A. White.

In other words, in America psychoanalysis was introduced primarily by clinical psychiatrists, by physicians whose experience was in intramural and extramural psychiatry and in research laboratories, by nonpartisans of the psychoanalytic movement. Theirs was a purely scientific, clinical interest. Consequently psychoanalysts in America, at the beginning, were more interested in psychosis than were their European colleagues.

It is rather curious, if not entirely paradoxical, that Freud, who fought such a valiant battle before the Viennese Medical Society because the latter would not recognize that hysteria can exist in men (a battle that had seemed to have been settled in favor of Freud since the days of Sydenham, if not earlier), and who was the champion of the psychoanalytic treatment of hysteria as the preferred treatment, had to discover soon that there actually were not enough hysterias to go around. Today, as we move deeply into the third quarter of the 20th century, hysteria as an actual clinical entity has become a matter of the past; the clinical pictures which were so well depicted by Charcot and by Pierre Janet seem to have gone into history, even as did typhoid in the large cities of the United States, or malaria before World War II. The reasons for the disappearance of so-called pure hysteria and even of anxiety hysteria, which Freud very early wished to establish as a separate clinical entity, remain a mystery.

There is a possibility, of course, that many conditions which were in the past diagnosed as hysterias, or even hypochondrias or neurasthenias, can be found today in that indefinite mass of hyphenated clinical entities which bears the name of psychosomatic conditions. Yet it is not easy even to venture a guess as to why a whole "class" of mental conditions suddenly almost disappeared from the field of our clinical purview. The "universal" neurosis of today has become the compulsion neurosis, or the so-called borderline case.

Toward a Medicopsychological Synthesis

Among the contributions which psychoanalysis has made to psychiatry there is one—albeit a possibly negative one—which must be mentioned: Psychoanalysis seems to have almost effaced the lines of demarcation which had existed between the various clinical entities theretofore known as Kraepelinian nosology. Psychoanalysis, whether the prewar European type or the American, stressed the psychological understanding of the patient rather than a consideration of the patient's clinical, nosological aspects. While this contribution cannot be overestimated, one may not overlook the negative influence it has had on psychiatric nosology.

It should be borne in mind that Freud never was a well-schooled psychiatrist. The little he learned from Meynert served small purpose in the course of Freud's fascination with his own early discoveries. Nor did Freud appear to learn much from Kraepelin, who was, after all, his contemporary. Kraepelin was the last serious representative of the Hippocratic tradition in psychiatry, almost the last in the line of great neurologists and psychiatrists whose scientific origin could be traced from Sydenham, Haslam, Pinel, Esquirol, Morel, and Magnan, and perhaps Charcot. Freud started with the latter, but his was not the path of objective, external, clinical description; his was the search for objective considerations of the subjective states of his patients. Freud, from around the year 1896, started to drift away from the purely externally objective and physicopathological, while Kraepelin completed in the same year his monumental nosological differentiation of the major psychoses. Thus the conflict between psychoanalytic (Freud) and academic (Kraepelinian) psychiatry can be considered not so much a conflict as a bifurcation of the main current of psychiatry into two branches, both flowing from the same main river but neither, despite its apparently independent strength, able to continue its independent existence for long. A synthesis, a clinical and scientific convergence, had to take place some day.

In our own time many factors have interfered with the possibility of such an early synthesis. First of all was the factor of Freud's own personality. His genius tolerated little opposition. More often than not he treated such opposition as personal affront; his relationships with Breuer and later with Wagner-Jauregg could be cited as typical. Then, too, psychoanalysis became a movement. Having early been ostracized by the academic circles of psychiatry, psychoanalysis seemed to turn toward academic isolationism; in a way, it excluded itself from the universities and schools of medicine. Freud even began to insist that psychoanalysis was a science *sui generis*, independent of medicine, a sort of supramedical or extramedical specialty, yet rooted deeply in psychopathology.

This trend continued with variable strength until the mid-30's. Psychoanalysis acquired more numerous adherents, while academic psychiatry began slowly to utilize the major Freudian concepts in order to gain a better psychological understanding of psychiatric patients. It was but natural that psychiatry as a whole, as far as psychoanalysis was concerned, should remain eclectic. It followed on the whole the path which had been marked by Eugen Bleuler, the first efficient and scholarly academic psychiatrist to utilize many of the conceptual constructions which psychoanalysis had to offer. Freud was not satisfied with Bleuler's cautious clinical attitude toward psychoanalysis. While Freud, with his characteristic cold but telling irony, suggested that no one but Bleuler could have invented the term ambivalence because of his own ambivalence toward psychoanalysis, it remains historically clear that Freud's fascination with Fliess's theory of polarities in human psychology, and his own dialectics, led to the concept of ambivalence—which Bleuler was keen enough to grasp and introduce into common usage in psychopathology.

Influence of World War II

The events which led to the advent of Hitler and to World War II had a truly revolutionary effect on the outer and inner relationships between psychiatry and psychoanalysis. The skeptical traditionalist in medicine, who shies away from the intimate coupling of sociological and political events with profound changes in the practice of any branch of medicine, should bear this in mind. It is true that certain ideological movements in the past changed little the course of medical development. The French Revolution, for instance, neither created nor prevented from appearing such hospital and nosological reformers as Philippe Pinel and Esquirol. On the other hand, the Communist revolution eradicated the teaching and practice of any psychopathology unless it were based on the reflexology of Bechterev and later on that of Pavlov (until today, in international congresses and in personal encounters, Russian psychiatrists deem it necessary to offer physiological reflexology or nothing).

But the Hitlerian catastrophe produced an even greater revolution in clinical psychopathology than the French Revolution, which established the primacy of the middle class, had in the field of economic change. Hitler not only burned the books of Freud and forced the old Freud out of Austria to England, where he died; the leading minds in the field of psychoanalysis emigrated from Germany, Austria, and later on from France to the United States. The ranks of psychoanalysis in America were immeasurably reinforced, as far as prestige and scientific productivity were concerned.

And it soon became clear that psychoanalysis in America, in order to sustain itself scientifically as well as economically, had to become truly a branch of medicine, a medical specialty. Moreover, the academic freedom and elasticity of the scientific atmosphere of America opened to psychoanalysis doors which had seemed to be thoroughly closed to Freud and his earliest followers in Austria and Germany; I have in mind the field of university instruction. Franz Alexander became the first professor of psychoanalysis in the world (at the University of Chicago). Hanns Sachs began to teach in the department of psychology at Harvard.

Soon the "younger generation," the first American students of the scientific émigrés, began to gather into groups of personal followers. Official psychoanalysis remained a movement; as it strove to maintain its independence, it also began to show signs of division, of trying to become a part of American academic life yet independent of it, of remaining a part of the central psychoanalytic organization yet independent of that as well. Some failed, some succeeded, in carrying out this rather delicate self-imposed task. Thus Karen Horney was led to create her own school, which became more sociological and philosophical than psychoanalytic, while Sandor Rado became the head of a psychoanalytic school which became a part of the College of Physicians and Surgeons of Columbia University.

Greater and greater numbers of properly trained younger Americans entered the field of psychoanalysis. Only 14 years after the conclusion of World War II, one can easily find more than a dozen psychoanalysts who are members of the departments of psychiatry throughout the United States. In other words, not only has psychoanalysis ceased to be an impediment to a medical academic career but at times it seems to have become an advantage.

The war years brought about significant developments. The concept of the dynamic unconscious, of the therapeutic value of bringing into consciousness that which is buried in the unconscious, was the underlying principle which led Roy Grinker to his experimentation in the North African campaign which for a while bore the appellation of narcoanalysis. The combined utilization of drugs or insulin and electric shock therapy, which—it is generally claimed—makes patients more amenable to psychotherapy, are all signs of our psychoanalytic times. Whether it is officially recognized or not, the chief conceptual trends of psychoanalysis, even in their eclectic form, have become incorporated as an inseparable part of our clinical psychopathology and therapeutic work in psychiatry.

Yet it would be a mistake to believe that the process of incorporation of psychoanalysis into psychiatry preserved the conceptual structure of psychoanalysis in its integrity. It is rather regrettable to note that while official or orthodox psychoanalysis is now more wedded to the main source of clinical psychopathology, i. e., psychiatry, it has drifted more into the field of theoretical elaborations, rather than the clinical and tangible which characterized the most brilliant work of Freud during the first half of his career. At the same time, one must acknowledge that this aspect of the postwar phase of psychoanalysis may be but a passing phenomenon. It is difficult to fathom the final outcome, but this much can be said: The responsibility for the scientific future of psychoanalysis must rest on the shoulders of the clinical workers of the United States. The extent of the devastation of Europe in this respect may be judged from the fact that the *International Journal of Psychoanalysis*, published in England, contains more contributions by workers from the United States than from other countries. The same can be said to be true, but to a much greater extent, of the scant, impoverished psychoanalytic publications in Germany.

Psychosomatic Medicine

A word or two about the most conspicuous and dramatic postwar development—I have in mind the field of psychosomatic medicine. From the standpoint of historical perspective, the development of psychosomatic medicine was not necessarily a result of World War II. Rather, it was a result of the spontaneous impulse toward a synthesis between psychopathology and general medicine. It was general medicine that still preserved a sort of unity of the Hippocratic tradition; it dealt with disease entities, yet it began to feel the need of considering the biological unity of the human person. On the other hand, psychiatry—whether it was frozen in depersonalized classifications and preestablished prognoses, or wedded to eclectic psychoanalysis and therefore of necessity more speculative—began to feel the need of preserving the psychological unity of man.

It is this, I believe, that explains the trend of establishing the biopsychological unity of the human person. It was out of the same psychological and scientific needs that the original "psychosomatic" medicine was born in Germany in 1838 (see my "History of Medical Psychology"); it was as a result of the same necessities that psychosomatic medicine reappeared exactly 100 years later in the United States (the first work of Flanders Dunbar was published in 1938). Thus the emotional, unconscious matrix of many of our physical symptoms received scientific recognition. This would have been impossible without Freud's theories of the dynamics of the unconscious and his concept of conversion and of displacement of emotional charges. The enormous amount of research done in this field cannot be overestimated. Some psychoanalysts, like Alexander, have turned almost exclusively to psychosomatic research; others, like Felix Deutsch, have made substantial contributions to this field. Whether psychosomatic medicine is here to stay as a specialty, or a subspecialty, is doubtful. For, after all, the field of internal medicine, enlightened as it has become by psychopathology (particularly psychoanalytic psychopathology), cannot remain both a medical and a psychiatric specialty. Problems of medical instruction and clinical differentiation arise which only the future can solve. Born out of historical necessity, psychosomatic medicine remains overburdened with new problems which medicine seems to be unable to solve and which psychiatry is as yet able merely to give names.

Thus, it seems justified to say that while World War II accelerated to an enormous extent the synthesis of psychoanalysis, psychiatry, and medicine, this synthesis seems now in the midst of a turbulent and confusing phase. The future of this synthesis is as yet neither clear nor otherwise determined.

33 E. 70th St. (21).

COUNCIL ON DRUGS

NEW AND NONOFFICIAL DRUGS

The following descriptions of drugs are based upon available evidence and do not in any case imply endorsement by the Council.

H. D. Kautz, M.D., *Secretary*.

Amphotericin B (Fungizone).—An antibiotic substance derived from strains of Streptomyces nodosus. The commercial preparation represents an amphotericin B-sodium desoxycholate complex.

Actions and Uses.—Amphotericin B is an antibiotic agent which is used for the treatment of deep-seated mycotic infections. Its spectrum of activity against the yeast-like fungi, both in vitro and in vivo, appears to be wider than that of any other antifungal agent now available. Thus, included among the fungi against which amphotericin B is active are Coccidioides immitis, Histoplasma capsulatum, Cryptococcus neoformans, Blastomyces dermatitidis, Blastomyces brasiliensis, and species of Candida. It has no demonstrable effect on viruses, protozoa, or bacteria. Against susceptible yeasts and fungi, the drug is fungistatic rather than fungicidal. Amphotericin B is relatively insoluble in water and is poorly absorbed from the gastrointestinal tract. Hence, it should be given parenterally, despite a few reported instances in which deep mycoses responded to orally administered amphotericin B. The drug is very slowly excreted by the kidneys; demonstrable blood levels persist for 18 hours or more after the intravenous injection of a single dose. To date, there is no clinical evidence of acquired resistance by previously susceptible micro-organisms to the antifungal action.

of amphotericin B. However, resistance of Coccidioides immitis and some species of Candida can be developed in vitro. In the case of the Candida organisms, this is sometimes associated with cross resistance to nystatin.

Amphotericin B is effective against some mycotic infections which have been notoriously refractory to all previous modes of therapy. The most gratifying results have been obtained in patients with disseminated North American blastomycosis. In many cases, arrests and apparent cures of serious and widespread infections have been reported. Since it is more effective than stilbamidine or hydroxystilbamidine, amphotericin B will, no doubt, supplant the diamidine bases as the drug of choice for the treatment of serious pulmonary and systemic North American blastomycosis. Limited clinical data suggest that it may be equally effective in the South American variety of the disease.

Excellent results have followed the use of amphotericin B in many, but not all, patients with severe, disseminated histoplasmosis. This is in contrast to the uniformly disappointing results with other agents previously tried for the chemotherapy of this disease. Although detailed and prolonged follow-up studies will be necessary to determine its exact therapeutic value, the many arrests and apparent cures already reported indicate that amphotericin B is the drug of choice in disseminated histoplasmosis. The drug has been observed to cause sputum conversion in patients with chronic cavitary pulmonary histoplasmosis and may also prove useful in the recently described entity of mediastinal histoplasmosis.

The results of therapy in meningeal cryptococcosis (torulosis) have been less favorable than in blastomycosis or histoplasmosis. There have undoubtedly been some complete therapeutic failures. Nevertheless, amphotericin B has been shown to have a definite chemotherapeutic effect in numerous patients with this disease. To date, the most encouraging results have been obtained in patients with subacute cryptococcosis. Despite the inability to consistently detect appreciable concentrations of amphotericin B in the spinal fluid, some patients with cryptococcic meningitis have experienced remissions of clinical symptoms, with a reversal of positive spinal fluid cultures after intravenous administration of the drug. It is too early to determine whether these cases represent cures. The drug has also been used intrathecally, with favorable results in some patients who did not respond to intravenous therapy. Although therapy with amphotericin B is not always effective, cryptococcic meningitis has responded favorably more often with this drug than with any previous agent. Currently, it should be the drug of first choice for this disease. In disseminated cryptococcosis without meningeal involvement, results have been better than in the meningeal form of the disease and are about equivalent to those obtained in blastomycosis and histoplasmosis.

Amphotericin B appears to be of some usefulness in the treament of disseminated coccidioidomycosis. However, results have been quite variable. Some patients show no response whatever to the drug. Others, including a few with coccidioidal osteomyelitis, have been markedly benefited, with apparent arrest of the disease. It is still too early to determine whether coccidioidomycosis has actually been cured by amphotericin B. In view of the poor prognosis of disseminated coccidioidomycosis and the inadequacy of all other forms of therapy, a therapeutic trial of amphotericin B is indicated. The drug does represent a definite advance in the management of this disease. There is evidence that amphotericin B given intravenously along with intrathecal therapy sometimes produces a better therapeutic response in patients with coccidioidal meningitis.

There is some evidence that generalized systemic moniliasis (candidiasis) may be favorably influenced by the use of amphotericin B. At the present time, however, clinical experience has been too limited to permit conclusions as to the ultimate effectiveness of the drug. Likewise, its relative usefulness against one species of Candida versus another is uncertain. Despite these inadequacies, however, it already seems apparent that amphotericin B is far more useful in systemic moniliasis than is nystatin. Although there is still good reason to seek better drugs, amphotericin B appears to be the most promising agent currently available for the treatment of this condition.

Toxicity and Side-effects.—The full spectrum of toxic manifestations to intravenously administered amphotericin B may not yet be characterized. Clinical experience indicates, however, that unpleasant and sometimes potentially dangerous side-reactions are almost inevitable at therapeutic dosage levels. Hence, amphotericin B should be used only in hospitals in which close clinical supervision of the patient is possible.

Systemic reactions, consisting of anorexia, headache, chills, and fever, are frequently encountered during the first few days of amphotericin B therapy. These tend to subside with continued administration and may be minimized by the concomitant use of antipyretics and/or antihistaminics. If a severe reaction occurs during the course of an infusion, therapy should be interrupted for about 15 minutes and then reinstituted. If the reaction recurs, therapy should be resumed at a lower dosage the next day.

The majority of patients show a rising level of blood urea nitrogen after prolonged therapy with the higher doses of amphotericin B. This toxic effect, together with other chemical evidence of renal dysfunction, is the chief limiting factor in the dosages which may be employed. Fortunately, to date, renal function has regularly returned to pretreatment levels after discontinuance of amphotericin B therapy. It follows, therefore, that blood urea nitrogen and nonprotein nitrogen levels should be checked routinely during therapy with amphotericin B. If the blood urea nitrogen or nonprotein nitrogen levels exceed 20 mg. per 100 ml. and 40 mg. per 100 ml., respectively, administration of amphotericin B should, in most cases, be stopped until these levels return to normal limits (usually one to two weeks). In some cases in which the clinical condition of the patient has warranted it, these values have been far exceeded, with no apparent evidence of permanent renal impairment. Kidney function tests should be done at appropriate intervals during prolonged therapy.

Solutions of amphotericin B have an irritating effect on the venous endothelium. Thus, pain at the site of infusion and chemical thrombophlebitis may follow its use. Thrombophlebitis may be minimized by decreasing the concentration of the infusion solution below 0.1 mg. per cubic centimeter, reducing the rate of infusion, frequent shift in sites of venipuncture, and using a smaller gauge needle. Among the miscellaneous side-effects to the drug are occasional instances of anemia during prolonged therapy and gastrointestinal cramping and diarrhea; a few patients have also developed a maculopapular drug rash.

In view of its appreciable toxicity, amphotericin B should be given only to patients in whom a diagnosis of susceptible mycotic infection has been reasonably substantiated, preferably by positive culture. There is not adequate justification for its use in vague and undiagnosed conditions merely because a skin test for one of the fungi may be positive. Once therapy has been initiated, quick cures should not be expected; prolonged therapy for a number of weeks or months may be necessary. The tendency to increase the dosage to the highest level recommended, or even higher, in the hope of obtaining a more prompt remission or cure should be discouraged. It is preferable to adjust the dosage to obviate renal damage and to prolong the time of treatment rather than to use higher dosages which are inherently accompanied by greater toxicity. The dosage may be so adjusted either by keeping below the maximal recommended daily dosage or, preferably, by administering the maximal daily dosage every other day.

Dosage.—Although amphotericin B has been tried on an experimental basis by the oral route, by topical application, and by various other parenteral routes (intra-articular, intrapleural, intralesional, intramuscular), the drug is presently considered suitable for use only by slow intravenous infusion and, in coccidioidal meningitis, by intrathecal injection. For intravenous infusion, unless venous irritation or thrombophlebitis necessitates using a more dilute solution, concentrations of 0.1 mg. per cubic centimeter are generally employed. Such solutions are prepared from the sterile lyophilized powder by appropriate dilution with 5% dextrose in water for injection. Saline solution should not be used since it will cause the amphotericin B to precipitate. The rate of administration should be adjusted so that the total dose is infused over a three-to-six-hour period. For intrathecal injection, the dosage should be gradually increased up to a maximum of 0.7 mg. The drug is diluted with sterile water for injection to a final concentration of 0.25 mg. per cubic centimeter and then admixed in the syringe with spinal fluid. Intrathecal injections should be repeated every 24 to 48 hours.

Since tolerance to amphotericin B varies among individuals, dosage must be adjusted according to the specific response of each patient. Therapy is initiated with a daily dose of approximately 0.25 mg. per kilogram of body weight. This dose is gradually increased until an optimum level is attained. Generally, total daily dosage may range up to 1.0 mg. per kilogram. Within this range, dosage should be maintained at the highest level not accompanied by toxic manifestations. In seriously ill patients, who do not respond to doses of 1.0 mg. per kilogram of body weight, this dose may be exceeded cautiously and gradually up to a maximum of 1.5 mg. per kilogram, provided no significant toxic effects are encountered. Since amphotericin B is excreted very slowly, if necessary, therapy may be given on alternate days to patients on the higher dosage schedule. Under no circumstances should the total daily dosage exceed 1.5 mg. per kilogram of body weight. Whenever medication is interrupted for a period longer than seven days, therapy is resumed by starting with the lowest dosage level, i. e., 0.25 mg. per kilogram, and increased gradually to an optimum level as outlined previously.

When substantial improvement is observed, daily administration of amphotericin B may be substituted for therapy on alternate days. Duration of therapy is variable. In clinical experience to date, significant improvement has been observed in most instances within four to eight weeks of treatment at full therapeutic dosage. A shorter period of therapy appears to produce a less favorable response and may lead to relapse.

Amphotericin B is heat labile and light sensitive. Hence, both the dry powder and solutions of the drug should be stored in the refrigerator and protected against exposure to light. Unused solutions should be discarded after 24 hours.

Preparations.—powder (injection) 50 mg.

Year of introduction: 1958.

E. R. Squibb & Sons, Division of Olin Mathieson Chemical Corporation, cooperated by furnishing scientific data to aid in the evaluation of amphotericin B.

From water emergencies to medical crises at home, fire department rescue squads are ready for immediate help, before doctor arrives.

MEDICINE AT WORK

- **Clinic for Motorists**
- **Physicians and Hospitals**
- **All for a Whale's Brain**
- **A Soviet Doctor Speaks**
- **Family Underground**
- ✓ **Disaster Doctors Aloft**

Directory of Dedication

A 104-page directory published without fanfare last month provides the first documentary evidence that the A. M. A.'s broad activities for the well-being of the nation's population sprout from a tree measuring a figurative 1,100 people high.

These persons, many of whom serve in week-end and late night sessions, donate as many as 100 hours yearly to the Association. None of the 1,100 is on the A. M. A. payroll. The volunteering M.D.'s (and Ph.D.'s and LL.D.'s and B.A.'s too) range in name from A (Adams, Wright R.) to Z (Zopf, L. C.) and come from all 50 states. Their talents enrich 13 A. M. A. Councils, more than 100 Committees, 21 Sections of the Scientific Assembly, 10 specialty journals, and approximately a dozen liaison groups.

But whether the dedicated doctor serves in a scientific role on a Standard Nomenclature or Residency Review Committee or contributes socioeconomic know-how as a key legislative man—or is an A. M. A. officer or Board of Trustees member who attempts to interweave the profession's far-reaching roles—his efforts eventually find focus in the 210-member House of Delegates. For this ultimate volunteer parliament sets Association policy.

Last month's directory lists approximately one-fourth of the 1,100 persons who form the heart of the Association's "advice and decision." (There will be no broad distribution of the volume.)

Rescue Squads Get There First In Providence Emergencies

One of Capt. Fred Badger's prized mementos is a Father's Day card from a child not his own. Captain Badger commands a fire department rescue squad in Providence, R. I., and the card is from a child he helped deliver five years ago on the city's traffic-crowded streets.

It is only one of hundreds of expressions of appreciation that members of the city's rescue squads have received from those they have helped in 17 years of emergency service. The squads deal in the unexpected and the critical. The men are trained in such diverse arts as emergency obstetrics and the use of a metal-cutting torch. Their list of equipment ranges from hypodermic syringes to diving suits.

The first squad was formed in 1942 in the face of skepticism, both lay and medical. Today the service is answering an average of 550 calls per month, and two of its proudest possessions are plaques awarded to it by the Providence Medical Association for outstanding service to the community.

Providence's first rescue squad resulted from an attempt by the city's public safety departments to find a better way to provide quick relief in emergencies, many of them medical. Men of the fire department were carefully screened and trained for the work before the first unit was activated. "This was an entirely new service with which the public was not at all acquainted," says Fire Chief Lewis Marshall. "Public confidence had to be gained, and the only way to get it was by rendering outstanding service."

Public confidence was gained, and at a rate that necessitated the addition of a second squad in 1952 and a third in 1957. Chief Marshall says, "Although the number of calls this year is running slightly ahead of last year, it appears that the saturation point has been reached."

The faith of Providence physicians in the service is indicated by the fact that more than a third of its calls come either from doctors themselves or from the Providence Medical Exchange. Dr. William J. O'Connell, former president of the Providence Medical Association, awarded the squads their plaques for outstanding service in 1955. He said, "There are few among us who have not had occasion to work with one of these units, to know how capably they are trained for their tasks, and how unselfishly they serve."

The only thing typical about a rescue squad call is its emergency nature: It may be a child struck by a speeding car, a worker caught in a large transmission belt, a woman in imminent labor, or an elderly man slumped at his desk. The rescue vehicle answering the call goes equipped with a physician's bag—a gift of the Providence Medical Association—and the doctor can be confident that high-quality first-aid procedures will keep the victim as safe and comfortable as possible until he arrives.

Dean of the Providence rescue firemen is the 63-year-old captain, Fred Badger, whose "10 or 15" injuries in the line of duty attest to the rugged tasks the squads perform. But when things are quiet he has a less demanding avocation—weaving soft-as-down crib blankets on a home-made loom.

Poison Control Centers Are Medicine's Stitch in Time

When baby eats the aspirin, tastes the laundry bleach, or plays with the ant powder, it is usually the family pediatrician who receives a hurried call from a distraught mother.

Small wonder, then, that the meeting of the American Association of Poison Control Centers was held in Chicago this week during the annual meeting of the American Academy of Pediatrics. It was the academy's awareness of the magnitude of the problem of accidental poisoning that was in large measure responsible for the birth in Chicago of the first of the 270 poison control centers now operating in the United States. (See Medicine at Work, The Journal, Jan. 12, 1957.)

It was in 1953 that the Illinois chapter of the academy sparked the formation of a poison control committee. Members included representatives of the American Medical Association, the Food and Drug Administration, the National Safety Council, and the five Chicago medical schools. The success of the committee's pilot study, which used the facilities of six Chicago hospitals and the Board of Health, stimulated similar efforts in cities throughout the nation.

Operated chiefly by hospitals and departments of health, these centers are aided in their task of making accurate information available by such units as the A. M. A. Committee on Toxicology and the National Clearinghouse for Poison Control Centers, operated by the Public Health Service.

As the association met, still another effort at awakening the American people to the dangers of accidental poisoning was under way. In Congress the House Judiciary Committee had reported favorably on a resolution requesting President Eisenhower to designate the second week in October as National Poison Prevention Week.

Chat with a Soviet Medical Leader

Q—Do nonphysicians set medical research goals in the Soviet Union? A—No. Doctors of the academy of sciences do that.

Q—What are some significant drugs in process in your country? A—A new antibiotic for the treatment of cancer and some improved anticoagulants. We also have a different treatment for hypertension which includes a regimen of four or five small meals a day for the patient.

Q—What is the status of mental illness generally and alcoholism specifically in Russia? A—Mental illness is down. Alcoholism is not much of a social problem in the U. S. S. R. and is not a medical problem at all.

Q—What proportion of physicians in the Soviet Union are members of the Communist Party? A—It is difficult to say. Certainly less than half.

The questioners are newsmen at the Second World Conference on Medical Education. Doing the answering is Dr. Zigmas I. Yanushkevichius, aged 48, born in Soviet Georgia, director of the Kaunas Medical Institute in Lithuania, specialist in cardiology and a leader in Russian medical education, holder of two Orders of the Soviet Union. At the news conference Dr. Yanushkevichius made these additional points:

—Like Americans and people elsewhere, Russians get tense and nervous—overworking, running for busses and subway trains, under-resting and overeating. The population is showing a rise in the incidence of heart disease and high blood pressure.

—"I cannot evaluate the comparative status of Russian and U. S. medical research. Am I not a guest in this country?"

—While every medical school graduate must practice in one of the districts for at least three years at a starting salary equivalent to $187 a month, incentive pay of up to four times that amount is offered for service in remote regions of the nation. Medical school professors get as much as $1,250 monthly.

—The Soviet Union is catching up in its need for engineers. As a result more men are studying medicine in Russia, where 70% of the physicians now are women. Some 200,000 students are being taught by 19,600 professors in 87 Russian medical schools. Eighty per cent of the students live in dormitories.

Most of the replies were given in English, although an interpreter was present for the occasional clarification of a question or answer.

Medical Education: Key to Health

Its Vital Role Is Emphasized by Physicians at a World Conference

> Every country has something unique to offer from its experience in medical education. No two schools of medicine, or their programs, are exactly alike. There is much to be learned from different experiences, and this second world conference can only advance the welfare of mankind in ways which are above political differences, race, and creed. Doctors and educators meet on the common ground of the welfare of the individual human being wherever he lives.

The speaker, an American, is a leading educator as well as physician. And as Dr. Raymond B. Allen, chancellor of the University of California at Los Angeles, thus opens the Second World Conference on Medical Education, he sees in his Chicago audience men of medical education who are of different politics, races, and creeds. They include:

Dr. Zigmas Yanushkevichius of Soviet Lithuania.

Dr. Romeo Y. Atienza of Manila.

Dr. Abdel Mohsen Soliman of Cairo.

This conference, continuing an effort first begun in London in 1953, brought together from 61 different countries more than 1,500 persons concerned with medical education. Special booths were set up in the assembly hall for interpreters to make simultaneous translations in English, French, and Spanish. Besides these formal presentations, which were keyed to the theme, "Medicine—A Lifelong Study," there were 125 scientific papers on topics ranging from medical student preceptorship to advanced research, a series of exhibits on electronic advances in medical science, visits to Chicago-area medical centers, and closed-circuit telecasts of medical roentgenographic images from nearby Cook County Hospital to the downtown convention hotel.

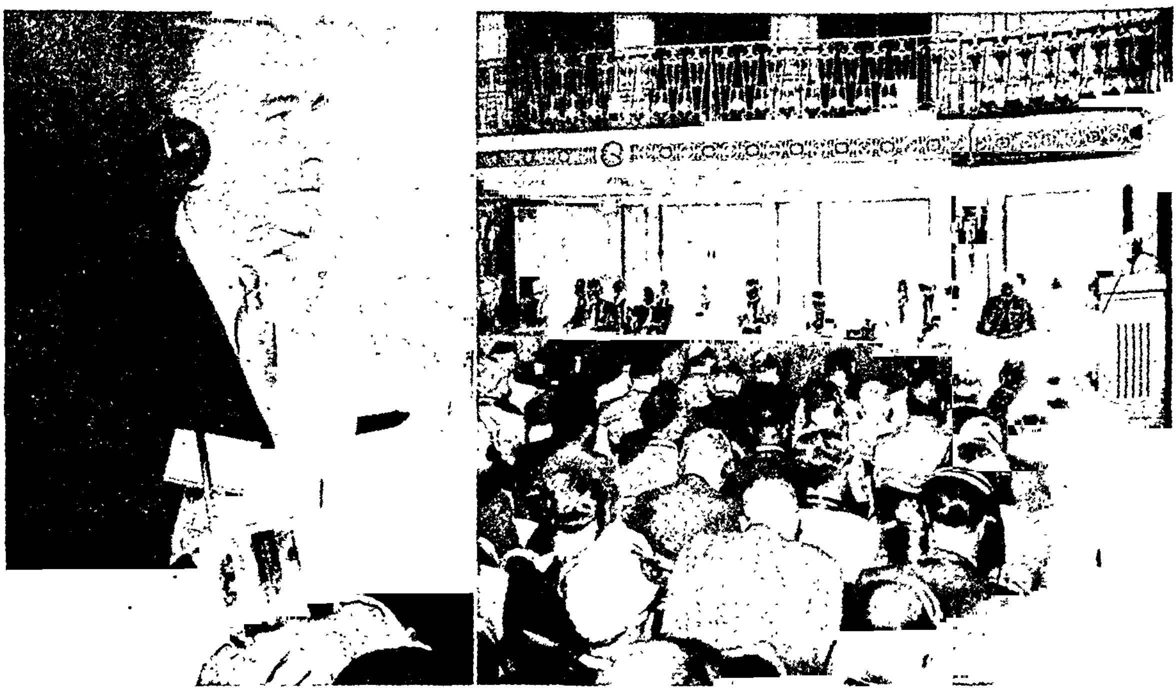
As illustrative of the broad fields covered by participants, the conference was sponsored jointly by four wide-ranging organizations: the World Medical Association, the World Health Organization, the Council for International Organizations of Medical Sciences, and the International Association of Universities.

Excerpted highlights from selected papers, delivered at the conference Aug. 29 through Sept. 4, follow:

On the meeting itself—

> There is an urgent need, throughout the world, for more well-trained physicians, nurses and other health workers. Only through such personnel can the benefits of modern science be brought to bear on mankind's eternal struggle against disease, suffering, and death. At your conference experts from many nations exchange knowledge and ideas in this life-giving field. Their work advances the cause of medical education and strengthens the bonds which unite the family of man.
>
> —Letter from President Eisenhower read by Dr. Allen.

> This week-long meeting provides a common ground for the free exchange of scientific informa-



Scenes from Second World Conference on Medical Education, in Chicago. A. M. A. President Louis M. Orr, at left, listens to portable receiver which can be dialed for simultaneous translations in English, Spanish, or French. At right, audience hears remarks of Dr. Louis Bauer, secretary general of World Medical Association, on podium.

California's PG Plan

Nearly 1,500 postgraduate medical training courses are offered to physicians in the United States (see The Journal, Aug. 15, 1959), but in few areas of the country is there such coordination with the practicing physician as exists in California.

At the Second World Conference on Medical Education last month the system was explained by Dr. Phil R. Manning, director of postgraduate education for the University of Southern California's medical school. In this program, initiated by the California Medical Association, practicing physicians are given the opportunity to plan curriculums with the medical school faculty, and they have actually been participating in academic programs with the teachers.

Programs include two-way teaching institutes, circuit courses in rural communities, and annual courses at state scientific meetings. This liaison of the medical educator and the practicing physician, says Dr. Manning, works in a mutually beneficial way for the well-being of all patients. And, he adds, through coordinated activities of the five medical schools in the state, there is an active extramural postgraduate program designed to meet the needs of physicians living in communities away from the teaching centers.

tion and experiences among countries. In this way a treasure-house of ideas and a compendium of knowledge in the broad field of medical education is able to flow from the more advanced countries to those now moving into the full light of medical progress.

—Dr. Louis H. Bauer, New York, secretary general, World Medical Association.

On "progress"—

The two biggest hazards threatening the quality of medical care on the North American continent today are too much dependence on drugs and a preoccupation with the financial aspects of medicine. The fault is not the doctor's alone; in our technological culture the laying on of healing hands has been replaced by instrumentation. Large sections of our people clamor excessively for x-ray examinations, chemical tests, and surgical procedures. Confidence in the healing power of nature has been displaced by undue dependence on the popular drugs of the moment.

—Dr. J. Wendell Macleod, Saskatoon Canada.

On hospital relations—

The void that exists between general practitioners and hospitals has worked to the detriment of the patient. There is no reason why this relation of mutual confidence between the doctor and his patient, which means so much in the treatment and prevention of sickness in the familiar environment, is not similarly valuable in the hospital circle.

—Dr. Juan Allwood-Paredes, El Salvador.

On specialization—

Fostering of medical specialties has encouraged a false method of dealing with the patient: He became during the past decades a "case" of liver, lung, heart, or something else and was no longer a "human," suffering in his body and soul. Even the patient himself cooperates in this change of medical practice, looking for as many specialists as he possibly can.

—Dr. Carlos Gomes D'Oliveira, Lisbon, Portugal.

Surveys of medical societies and placement bureaus reveal that there is approximately five times the demand for competent general practitioners as there is for doctors trained to care for only certain segments of disease. This demand has been largely ignored by some of our medical schools in their headlong effort to satisfy those who advocate impersonal, mass service, production-line medical care.

—Dr. Malcolm E. Phelps, El Reno Okla.

On medical practice—

It is very unfortunate that many of our finest teachers have not had the opportunities of actually practicing medicine outside of the cloistered confines of a huge medical center. If these fine teachers could experience such satisfying contact with a patient they would learn that the ailments seen, the problems presented, and the treatments necessary would be vastly different than those which they are accustomed to seeing in the teaching centers. This experience would not only make them better teachers but would give them an insight into situations that have to be met in the private practice of medicine.

—Dr. Phelps.

Twelve Who Did Not Fail

If the passing grades of state licensure examinations are a gauge of the quality of medical education, then 12 medical schools in the United States stand at the top of the list. The latest report on medical licensure by the A. M. A. Council on Medical Education and Hospitals shows that last year these 12 approved schools had no medical licensing examination failures among their graduates:

Stanford University
Chicago Medical School
University of Chicago
Boston University
Wayne State University
University of Mississippi
University of Missouri
University of Nebraska
Albany Medical College
University of Oregon
University of Pittsburgh
University of Utah

A total of 540 graduates of those medical schools passed examinations given in several dozen states.

Lions, Whales And Doggedness

It took more than a year of transcontinental planning and hard work, but, thanks to the teamwork of a fraternity, a ship's surgeon, and a medical educator, exciting brain research is moving ahead on a relatively unexplored plane. Joining in the cooperative effort were the Norwegian government, a crew of rugged whalers, and a steamship line.

The story begins in mid-1958 when Dr. Arthur V. Jensen, assistant dean and associate professor of anatomy at New York Medical College, spoke to the Croton-on-Hudson Lions Club about a lack of research on the brains of whales. Club members decided that here was a goal in their work to aid medical knowledge (see Medicine at Work, THE JOURNAL, April 25, 1959, for similar Lions Club efforts). They approached fellow Lions in Tonsberg, Norway, where the owner of a whaling vessel, Carsten Bruun, agreed to donate the brains of his catch.

In February and March the ship's surgeon, Dr. David Hummel, was able to take part in the removal of three whales' brains—delicately trimming the skulls with huge power saws so that formalin preservative could be injected. Each time. Dr. Hummel jumped into the blood and muck and used his sheath knife to sever the spinal cord with split-second timing.

The Norwegian-American Line donated the transportation of the specimens to New York Medical College, where the barreled brains were accepted June 25 at a ceremony attended by Norway's acting consul general. Dr. Jensen hopes to do comparative studies involving the human and the porpoise brain, and to observe the correlation between external organs of some special senses—such as smell, vision, and hearing—and the structures in the brains corresponding to those senses.

"This project," says the medical college dean, Dr. Ralph E. Snyder, "has not only aided medical science but has also contributed to cooperation with our friends around the world, through our common desires for learning, culture, and understanding."

A Look at the Future Of Medical Television

Ever since television established itself as a popular medium, its potential as a teaching instrument has interested medical educators. Closed-circuit telecasts have become standard fare at most big medical meetings, and experiments are being made to determine whether commercial channels may also be practical carriers for medical programming.

So far, these ventures have generally been carried on as solo operations, but next week a new organization, devoted to the advancement of medical telecasting, will hold its maiden meeting at Bethesda, Md. Known as the Council for Medical Television, the group is the outcome of a conference on television and postgraduate education held early last spring. Co-sponsors of the conference were the American Academy of General Practice and the Institute for the Advancement of Medical Communication.

Represented at the original conference were six types of organizations concerned with medical education: professional associations, universities, voluntary health agencies, pharmaceutical firms, governmental agencies, and equipment and broadcasting companies. The conferees spent two days deciding what areas promised fruitful study and then authorized formation of the Council for Medical Television within the framework of the Institute. The meeting Oct. 15 and 16 will be the first formal council session.

Although oriented to television as a medium, members of the council believe that it may be able to adapt some methods of other educational pioneers to its own uses. Of particular interest, according to its bulletin, are the two-way FM radio courses now being offered by Albany Medical College (see Medicine at Work, THE JOURNAL, March 21, 1959). The possibility that Albany may soon be joined on the air by other schools offering postgraduate medical education was indicated when the A. M. A. recently filed a petition with the Federal Communications Commission requesting the allocation of six FM channels for medical education purposes.

Miami's Medical School Invites Public Interest in Its Affairs

When a private medical school operates under a state subsidy, uses the facilities of a county-owned hospital, and leases quarters from the Veterans Administration, diplomacy indicates that its aims and ideals be thoroughly understood within its own community.

This is the position of the six-year-old School of Medicine of the University of Miami in Florida whose teaching units are spread throughout Dade County. Seeking to bind itself more closely to the community, the school recently unveiled a plan to bridge the gap between town and gown by means of a 21-man advisory council with a mandate to "concern itself with institutional and financial development of the school and all phases of the school's operation touching on the public interest."

Six local physicians have joined lawyers, bankers, businessmen, and manufacturers on the new council, which is responsible to the school's board of

Committee on Alcoholism of A. M. A. Council on Mental Health meets in Chicago Aug. 14 and 15. At left, back to camera, Chairman Marvin Block discusses with Harold Himwich and Robert Fleming the subjectivity of certain physicians who attempt to diagnose the disease. (Not shown are committee members Selden Bacon and Jackson Smith.) In photo at right, committee guests study details of proposed handbook of alcoholism terminology based on Standard Nomenclature of Diseases and Operations. Guests (left to right) are Dr. E. M. Jellinek of International Institute for Research on Problems of Alcoholism, Mrs. Adaline Hayden and Dr. Edward Thompson of Standard Nomenclature, Mr. Mark Keller of *Quarterly Journal of Studies on Alcohol*, and Dr. Ruth Fox of National Council on Alcoholism.

trustees. The idea for such a council emerged from a meeting between the school's dean, Homer F. Marsh, Ph.D., and Dr. Milton Coplan, clinical professor at Miami (and Chairman of the A. M. A. Section on Urology). Dr. Coplan has been interested in the school since its inception and has aided in developing its faculty.

The school's trustees approved the council idea last December and appointed the first 12 members late in February. The council now has a full roster and has met several times. Physicians appointed include Drs. Coplan, E. Sterling Nichol, Warren W. Quillian, Donald W. Smith, S. Charles Werblow, and Kenneth S. Whitmer.

The school's biggest current problem is the financing of a $4 million dollar medical education and research center. Students now travel as far as 23 miles between elements of the school housed in such varied facilities as an abandoned naval base, the ballroom of a former luxury hotel, and a funeral parlor.

Atom Lab—Challenge in Occupational Medicine

One of the most formidable responsibilities in the field of occupational health is that held by Dr. Thomas L. Shipman, who daily faces the task of supervising the work environment of hundreds of employees in an area where disaster may follow one false move.

Dr. Shipman is health division leader of the Los Alamos (N. Mex.) Scientific Laboratory, and the program he maintains in one of the world's most ticklish "industries" naturally interests the A. M. A. Council on Industrial Health. Next week the Council members will get a firsthand briefing at Los Alamos. The session, Oct. 15 through 17, will combine a regular meeting of the Council with a tour of the laboratory and an explanation of its preventive health program.

Agenda items include:

—Proposed revisions of the Council's policy

Physician to a Factory

Can a physician in private practice logically look on a small industrial concern as a "patient"? He can indeed, and in quite a number of instances he does—to the benefit of both himself and the workers.

Suspecting that an indeterminate number of small plants (with 500 employees or less) are operating occupational health programs under the leadership of a doctor who devotes only part of his time to the task, the A. M. A. Committee on Medical Care for Industrial Workers recently completed a spot check. Its report states, "Results of the survey confirm the Committee's belief that the physician in private practice can [supervise and administer] such programs. Whether the physician practices by himself or as part of a group, the survey findings reveal that all, or a wide range of, occupational health services can be provided to employees in small establishments."

The report, which goes to the Council on Industrial Health, is based on 200 replies to a questionnaire mailed to physicians thought to be engaging in such work. The purpose of the poll is based on this Committee belief: "Thousands of additional physicians, if they are aware of the nature of the programs and the roles they can assume in supervising them, could be encouraged to take a greater interest in the development and expansion of such services. . . ."

Is there a need for such development and expansion? Unquestionably, says the Committee, noting that the "overwhelming majority" of small plants do not make such programs available to their employees, who make up approximately 80% of the nation's labor force.

statement, "Scope, Objectives, and Functions of Occupational Health Programs."

–Consideration of possible sites for the 1961 Congress on Industrial Health. (The 1960 session is scheduled for Charlotte, N. C.)

–Reconsideration of statements on executive health examinations and multiphasic screening developed by the Committee on Medical Care for Industrial Workers (see Medicine at Work, THE JOURNAL, April 25, 1959).

As the Council prepares to meet, members recall that it was on New Year's Day, 1959, that a technician died of overexposure to ionizing radiation. The fact that this was the first serious case of radiation injury at Los Alamos since 1946 indicates the care exercised by Dr. Shipman and his fellow workers.

Doctor-Teacher Seminars On Health in Education

Five of the most significant issues in school health and physical education will get a thorough airing next week at the National Conference on Physicians and Schools in Highland Park, Ill.

Approximately 300 physicians, educators, and public health workers are expected to attend the session, the seventh such affair to be sponsored by the A. M. A. Department of Health Education. They will listen to guest experts, join in small discussion groups, and express conclusions on Oct. 13, 14, and 15. Topics chosen for timeliness and significance include:

Fitness. Should young people be rated on national physical performance norms as derived from tests?

Teaching. How much time is needed, and where, in the crowded curriculum, can you find it for health education as well as physical education?

Examinations. Do periodic health examinations pay off, in terms of the medical manpower they require?

Standards. Are they needed at each grade level to measure health knowledge, attitudes, and behavior?

Classification. How can pupils be categorized for physical education purposes, and how can the problem of medical excuses be alleviated?

Past conferences have been truly national in scope, with all states represented, but this year even the international character of health education will be demonstrated, when Dr. I. H. Flack, editor of the British magazine *Family Doctor,* speaks on "Problems of Communication in Health Education."

The AHA Annual Meeting

Highlights Focus on Osteopathy, Costs, Warmth, and Physicians

Hospitals need more help from physicians in day-to-day management—and at the same time physicians need to recognize the dangers of controls on hospitals. Dr. Russell A. Nelson, director of the Johns Hopkins hospital, Baltimore, has sounded that double challenge in his induction speech as president of the American Hospital Association:

"The public and its insurance companies are sensitive to problems of utilization. Doctors admit and order services on patients, and only they can make these judgments—only they can exercise any control. Hospital doctors need more responsibility and authority in hospital affairs. . . . By and large, the medical profession has not yet realized the implication to medical practice inherent in the controls of cost and use. Too often there are private murmurs that something is wrong 'in Blue Cross and the hospitals.' They don't stop to think that controls on use of beds and services are controls on their medical judgments and that controls on hospital costs put a limit on hospital services to their patients. We must make the profession see the dangers and work with us on solutions."

As Dr. Nelson spoke to the AHA's 100 delegates, more than 12,000 hospital officials were attending exhibits and other sessions at the 61st annual meeting in New York City late in August. Among actions taken by the delegates was one to permit AHA listing of hospitals where osteopaths are practicing under supervision of doctors of medicine.

A total of 48 AHA program sessions covered a wide range of topics, including progressive patient care, employee relations, accreditation, and prepayment plans for the aged.

One panel agreed that the answer to health care for the aged must come through cooperative community planning in which health facilities are but one important factor in the search for ultimate solutions. Said Kenneth J. Holmquist, a panelist who is superintendent of the Bethesda Hospital in St. Paul, Minn., "Because the aged have such a great variation in their health needs and because most of them can be cared for in their own homes, the importance of extending the hospital services to their own homes or to a related health facility becomes of major importance."

In two other sessions a noted public opinion analyst and a psychiatrist stressed the need for more warmth to hospital patients and a higher level of emotional maturity among hospital em-

Family Underground—A Test in Confined Living

Where do you find a family of five willing to spend two weeks in a bomb shelter as an experiment in confined living? If you're as lucky as members of the psychology department at Princeton University, you find them right under your nose.

Thomas A. Powner, a manual training teacher who does part-time work for the university, volunteered the services of himself, his wife, and their three children when he learned of the need. They emerged from their self-imposed isolation in mid-August after having spent 14 days in an 8-ft. by 9-ft. fall-out shelter, in a test, sponsored by the university and the Office of Civil and Defense Mobilization, to assess the stresses of confined living. The shelter was located in the basement of a university building.

The Powners lived on canned food, bottled water, and air circulated by means of a hand-cranked ventilator. For illumination they had candles and a flashlight; the candles served double duty by heating food. For recreation there were games for the kids, all under 5 years of age, and books for the adults. They also had a bottle of whisky and a supply of tranquilizer pills.

The Powners' pediatrician, Dr. S. Robert Lewis, examined all the children before and after the experiment and provided Mrs. Powner with a set of written instructions for maintaining their health during isolation. No serious difficulties were encountered during the stay, which the family could have ended at any point. All lost weight except one of the children, who gained.

Chief among the Powners' problems were poor ventilation, overheating, and waste disposal, but even at that Mrs. Powner says, "It wasn't as bad as I thought it was going to be."

One thing did alarm the family, however. When they emerged, they were told that a hidden microphone had permitted tape recording of every sound made during the isolation test—a safety precaution decided on by scientists conducting the experiment.

ployees. "People have great admiration for the hospitals' technical facilities and performance but feel the human side of hospital care is frequently given short shrift," said Elmo Roper. And Dr. Francis J. Braceland, psychiatrist-in-chief at the Institute of Living, Hartford, Conn., told another AHA audience, "The emotional immaturity of hospital personnel is the primary hindrance to efficient hospital operation and effective service to patients." Dr. Braceland called on hospital personnel and the 2 million volunteers working in hospitals to shed the "egocentricism of infancy, the balkiness and unreasonableness of youth, and take a close look at ourselves."

Not immaturity but carelessness appears to be the major cause of financial losses to hospitals from malpractice suits, according to Dr. August H. Groeschel, associate director for professional services at New York Hospital, where 389 errors in administration of medicaments were recorded last year. This is an average of one medication error out of 17,000 administrations. At least four out of every five of the mistakes, says Dr. Groeschel, occurred during peak busy hours when nurses were so rushed they misread or misheard prescriptions.

A lighter note on an equally serious subject was sounded at a panel discussion which concluded that there should be a closer integration of the "allied health professions" in hospitals. Abe Rubin, D.Sc., secretary of the American Podiatry Society, said, "The fact that the average patient being given a physical examination in a hospital is asked to remove all clothing except his shoes is recognition of the podiatrist's special field."

Babies, Aged, and Public Health Are Only Part of CMS Report

In 1950, an A. M. A. House of Delegates policy statement listed six basic services to be provided by public health authorities: vital statistics, public health education, environmental sanitation, public health laboratories, communicable disease control, and maternity and infancy hygiene where private facilities are unavailable. This year the Council on Medical Service launched a study designed to reevaluate the 1950 statement in the light of present conditions.

In its annual report—discussed at a meeting held in Chicago Aug. 29 and 30—the Council notes that the "basic six no longer approximate the sum total of public health concern. In addition to these traditional services, many public health authorities are now interested in diabetes control, cancer control, rheumatic fever prophylaxis, indigent medical care, mental health, heart disease, and accident prevention."

Objectives of the current study being undertaken by the Council's Committee on Medical Facilities are to inventory public health services and to redefine the relationship of public health to private practice.

Here are some additional highlights from the reports of other committees of the Council:

—A prospectus for current and future activities has been drawn up by the Committee on Indigent Care. It outlines activities which the Committee feels it ought to undertake to implement its belief that "the profession should work actively, formally, and publicly to assure the adequate, high-quality care for the needy demanded by A. M. A. policy statements."

—The report of the Committee on Maternal and Child Care reviews conferences which preceded the Committee's publication of "A Guide for the Study of Perinatal Mortality and Morbidity" in April, a supplement to which is now being prepared. Current and future activities in this field will be aimed at helping to solve the many problems of the perinatal period.

—The Committee on Medical Care for Industrial Workers reports that a change for the better in relationships between the A. M. A. and representatives of union health plans seems to have become evident since the issue of the report of the Commission on Medical Care Plans. It also suggests that this affords "a splendid opportunity for the resolution of some of the problems certain states have encountered in their relations with . . . medical care plans."

—A state-by-state recapitulation of health insurance programs for elderly persons is a feature of the report of the Committee on Insurance and Prepayment Plans. It follows a detailed analysis of the growth, in the past year, of medical insurance coverage in the U. S.

—The Committee on Federal Medical Care reports its efforts to aid the Railroad Retirement Board in getting satisfactory physical examination reports from private physicians in a greater proportion of its disability cases. In the past, federal and state medical facilities have sometimes been used for such examinations.

—A series of nine regional conferences on aging are now under way, according to the report of the Committee on Aging. Three have already been held. The remainder will take place during the coming six months. Directed toward lay groups interested in aging, as well as medical and related organizations, the meetings have featured speakers, panels, and symposiums. Subjects covered include employment and retirement policies, financing health care, and such expanding developments as home care, homemaker services, and progressive patient care experiments (see Medicine at Work, THE JOURNAL, Sept. 12, 1959, and April 26, 1958).

How Doctors Tutor the Careless To Cut Ohio's Auto Injuries

The arms of many former infantrymen still bear small, circular scars as a result of a World War II training device—a drop of mustard gas placed on the skin. The resulting burn taught a long-lasting respect for the potency of chemical weapons.

Today, more than 15 years later, a variation of the same technique is being used by physicians in Akron, Ohio, to impress careless drivers in the different—but no less deadly—war against accidents.

The Ohio physicians use colored slides, x-ray films, and tales of the emergency room in a "school" to which law-breaking motorists are often sentenced by Akron judges. The purpose is to develop a respect for the carnage that can be wrought by a ton and a half of highly powered steel in the hands of a driver who either forgets safety rules or thinks they are for squares.

Dr. Paul Weygandt, chairman of the Summit County Medical Society's safety committee and a member of the school's faculty, described the plan at the annual A. M. A. Public Relations Institute in August. He said, "We use some pretty graphic examples because our captive audience usually has flat-top haircuts and requires a little shocking." Drivers are assigned to the school as a part of the sentence for traffic violations. The judge makes it plain that attendance can easily be replaced by 30 days in the workhouse. Attendance is controlled by means of enrollment slips that are stamped at each session.

Violators attend four sessions in all, one of which is given by the physicians, four orthopedists and a surgeon. The other three are offered by representatives of the highway patrol, the insurance companies, and the judiciary. The course takes four days, with one 45-minute session devoted to a single subject each evening.

The school originated in 1953, when Judge Thomas Powers of the Akron Municipal Court prevailed on the local Junior Chamber of Commerce to assume its operation, but it wasn't until last year that the Summit County Medical Society added the fourth lecture on injuries to the original three, which dealt with the law, financial responsibilities, and driving techniques. "These folks are a challenge," says Dr. Weygandt in what is undoubtedly an understatement. "We try to emphasize the suffering and expense caused by traffic injuries—not just deaths." Results, of course, are hard to document, but the doctors note that few have to take the course a second time.

Perhaps the school's greatest tribute came from the parents of one offender who had been forced to attend. They wanted to know if another child—about to begin his driving career—could enroll too.

The Doctor-Pilots

They Fly for Fun, but They Form a Mobile Disaster Force, Too

Richard P. Pratt

It was a bright spring day in mid-April, 1947, when the freighter *Grandcamp*, berthed at a Gulf Coast pier, exploded, caught fire, touched off a conflagration that took 500 lives, and engraved the name of Texas City high on the list of man-caused disasters.

More than 12 years later, the nightmare impression of that flame-lit tragedy is a constant symbol of purpose to Dr. Frank Reed as he lays detailed plans for mobilizing Illinois' airborne physicians in the event of a similar disaster. Today Dr. Reed is disaster chairman for Illinois of the Flying Physicians Association, but on that tragic day in 1947 he was an Army medical officer undergoing indoctrination at Fort Sam Houston. Flown to Texas City as one of a team of Army physicians, he has a vivid and personal knowledge of the value of a trained and instantly mobile medical team in time of catastrophe (see Medicine at Work, THE JOURNAL, Aug. 10, 1957).

Dr. Reed's dream—and that of the other doctor-pilots who form the membership of the four-year-old Flying Physicians Association—is an organizational plan that will make any or all of the airborne medicos almost instantly available to aid the sick and injured in emergencies of any magnitude. The FPA's proposed disaster service is the brainchild of Dr. Frank Coble of Richmond, Ind., who explains it this way:

"The Flying Physicians Association has 1,500 members, each of whom could quickly pick up one or two nurses from his office or local hospital and a bundle of medical supplies on short notice. Since each doctor flies his own plane, no other pilots are needed. These planes are capable of landing in a cow pasture or on a segment of blockaded highway.

Although the disaster plan is still chiefly a paper one, Dr. Coble has high hopes that other areas will follow the Illinois lead in organization, and that in time the nation will be spanned by a network of interconnected FPA disaster groups.

Safety at the Stick

Last June the FPA demonstrated its ability to mobilize a group of doctor-manned planes and fly them thousands of miles to a predetermined location, when 52 of its members took part in an air cruise to Anchorage, Alaska. Starting from all regions of the U. S., the doctor-pilots—many with friends or family members on board—met in Great Falls, Mont., and followed the Alaskan Highway to the 49th state. A similar, if somewhat less spectacular, performance was held last month when hundreds of FPA members zeroed in on Wagoner, Okla., for the group's annual meeting.

Emergency planning is the most ambitious project yet undertaken by the FPA, but it is by no means the only activity. Flying proficiency and safety are crucial matters that have been forced on the physician-pilots by necessity. Alarmed by fatal but avoidable "weather" accidents, the doctors have made minimum instrument training a requirement for membership renewal. Required is the ability to make a 180-degree turn while "in the soup" and to maintain a straight and level course. Put together, these two skills are sufficient to enable the pilot to fly back out of instrument weather into which he may have ventured inadvertently.

An apostle of such flying safeguards is Dr. Harold N. Brown of Lombard, Ill., national FPA safety chairman. A former flight surgeon and Air Force pilot, he not only preaches instrument safeguards to his brother physicians but bombards popular flying magazines with articles on such subjects as oxygen deficiency and depth perception in aviation. Flying safety is a family affair. Mrs. Brown is also a physician, and a flying one at that.

The Aerial Practice

Although most of the flying physicians fly only as a hobby, or perhaps to medical meetings, some have used private air transportation to expand their practices:

—In the Hawaiian Islands, Dr. William Totherow services a distant and doctorless village on the island of Maui, from his home base at Wailuku, by commuting three days a week in his own plane.

—In Alaska, Dr. Milo Fritz uses his Anchorage-based plane to visit patients in outlying areas and

And the Earth Trembled

Although neither of them is a pilot, two Montana physicians made good use of planes as emergency transportation this year when the mid-August earthquakes killed and injured scores of vacationers in Yellowstone National Park. Drs. Raymond G. Bayles of Bozeman and Ronald Losee of Ennis both chartered aircraft to speed aid to the injured.

Dr. Bayles flew to the Hebgen Dam area and then switched to a boat across the lake to a point where a large group of the injured had gathered.

Dr. Losee was faced with a dual problem. First he helped evacuate his own small town of Ennis which was threatened with inundation by the weakened dam. Later he flew to the site of a tremendous landslide to treat survivors and see to their hospitalization.

Working under pressure, physician (left, in white shirt) cares for victims of recent Montana earthquake as they patiently wait for planes that will fly them to hospital.

to ferry them from remote villages to city hospital facilities.

Not all working flyers live in the more exotic areas of the nation, either. In downstate Illinois, Dr. William Requarth leaves his Decatur office each Wednesday for a day at the University of Illinois College of Medicine, in Chicago, where he is assistant professor of surgery. And in Milwaukee, Dr. Herman Heise, who is Chairman of the A. M. A. Committee on Medicolegal Problems, uses his plane in atmospheric tests of pollen distribution and fall-out probabilities.

It was in Chicago, too, that two flying doctors recently proved how valuable the marriage between medicine and aviation can be: A Michigan physician, faced with a patient whose heart had stopped beating on an average of every five minutes for more than 24 hours, needed electronic equipment to take over the job of heart stimulation that had to be done manually in the small hospital. To the rescue came two Chicago flying physicians who not only flew the patient to downtown Meigs Field, but kept him under constant medical observation during the critical hop.

Kitty Hawk to the Moon

Both flying itself and the attendant problems have fascinated doctors for some time. Wilbur Wright had hardly got off the ground at Kitty Hawk before medical men began to take an interest in the problems posed by man in flight. The late Col. David A. Meyers was one of the early doctor-pilots in the era of the Jenny and the Liberty engine. He not only served as chief surgeon of the early Air Corps, but was also co-inventor with Col. W. C. Eaker of the turn and bank indicator, still a basic flight instrument. One of Colonel Meyers' chief interests was in the physiology of flying, although he probably little realized that such studies would one day hold the key to man's efforts to project himself into space (see Medicine at Work, THE JOURNAL, June 15, 1957).

Although most of today's physicians fly for pleasure, the profession has long recognized the medical advantages inherent in such a fast and efficient form of transportation. In Australia, settlement of the forbidding interior of the continent has been made incalculably safer by the Flying Doctor Service, which covers an area of 2 million square miles from 12 bases. Nearly every lonely outpost maintains radio contact with the service originated by a medical missionary, the Rev. John Flynn, and now operated by the Australian government.

The Soviet Union claims to have served 85,000 of its isolated citizens last year through health squads using airplanes, helicopters, and automobiles. And in Portugal, the new Minister of Health, Dr. Martins de Carvalho, is planning helicopter-equipped teams to provide medical relief to accident victims in rural areas.

Although most flying doctors are hearty advocates of air travel for their professional brethren, there are a few with complaints—some of them humorous only in retrospect. One physician, flying to the hospital with a patient in labor, found that with each contraction she stiffened, kicking the rudder bar and putting the plane into a skid. Despite the handicap, both the flight and the subsequent delivery were successful.

Skills and Mobility

"The flying physician represents an unusual combination of skills—a physician with facilities to move quickly to a stricken area. . . . He represents an important resource of medical skills."

The speaker is Dr. Harold Lueth, Chairman of the A. M. A. Committee on Disaster Medical Care and a consultant to the Office of Civil and Defense Mobilization. The occasion is the meeting in Anchorage, Alaska, last June of more than 50 flying physicians who flew their own planes to the northern state.

Dr. Lueth told the group about civil defense plans for the medical care of mass casualties and quoted OCDM Director Leo Hoegh on citizen responsibility: "Civil defense, to be effective, will involve every human being, professional or nonprofessional, and every facility that can be found."

GRADUATE MEDICAL EDUCATION IN THE UNITED STATES

ANNUAL REPORT AND DIRECTORY OF APPROVED INTERNSHIPS AND RESIDENCIES IN THE UNITED STATES; AND THE REQUIREMENTS OF EXAMINING BOARDS IN THE MEDICAL SPECIALTIES. PREPARED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

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ANNUAL REPORT

The 33rd Annual Report on Internships and Residencies is submitted herewith, consisting of detailed information and statistical data on all intern and residency programs approved by the Council.

Its primary purpose has always been to provide this information for recent medical school graduates who wish to continue their subsequent medical education and clinical training as interns or residents. While this information applied almost exclusively to graduates of United States and Canadian medical schools prior to 1948, it has subsequently become of world-wide importance to the many graduates of foreign medical schools wishing to learn American methods for application in their homelands.

A secondary and increasingly important function of this report is the use made of it by those responsible for administration of medical care and training programs and for planning for the future. Such persons represent hospital administration, medical school administration, state medical boards, editorial staffs of professional as well as lay journals, and government agencies such as the Department of State, the Military Establishment, and the Veterans Administration.

This annual report consists of three major portions—the statistical tables and narrative analysis of program performance and trends, the Directory of Approved Internships and Residencies, and the Requirements for Certification of the American Specialty Boards. The entire report is reprinted as the Directory of Approved Internships and Residencies, and is available upon request to the Council.

The statistical analyses on internship programs follow the format of previous years, but for residency programs considerable additional data were secured in a supplementary questionnaire which was satisfactorily completed by a majority of the hospitals. A chart has been prepared which demonstrates the remarkable post-World War II increase in graduate training programs, particularly residencies, and it includes the programs supported by federal agencies as well as the positions filled by foreign medical graduates. Additional data on foreign medical graduates have been generously provided by the Institute of International Education.

The Directory of Approved Internships and Residencies represents the cooperative efforts of three groups. The Council staff maintains a year-round program of surveys and consultations at the hospital level; the medical staffs and administrators of the hospitals listed cooperate fully in providing the necessary data for both the surveys and for the annual questionnaire; the Review Committees evaluate the survey reports and also determine the future status of programs and appropriate methods of listing approved programs in the Directory.

The functions and responsibilities of the various Review Committees were described in detail in the 32nd Annual Report published in The Journal of the American Medical Association Oct. 4, 1958. The following organizations collaborated with the Council through representation on the Internship Review Committee:

- American Academy of General Practice
- American Hospital Association
- Association of American Medical Colleges
- Federation of State Medical Boards of the United States

The following organizations collaborated with the Council in approving residency training programs:

- Advisory Board for Medical Specialties
- American Academy of General Practice
- American Academy of Occupational Medicine
- American Academy of Pediatrics
- American Board of Anesthesiology
- American Board of Dermatology
- American Board of Internal Medicine
  - Subspecialty Board on Allergy
  - Subspecialty Board on Cardiovascular Disease
  - Subspecialty Board on Gastroenterology
  - Subspecialty Board on Pulmonary Diseases
- American Board of Neurological Surgery
- American Board of Obstetrics and Gynecology
- American Board of Ophthalmology
- American Board of Orthopedic Surgery
- American Board of Otolaryngology
- American Board of Pathology
- American Board of Pediatrics
  - Subspecialty Board of Pediatric Allergy
- American Board of Physical Medicine and Rehabilitation
- American Board of Plastic Surgery
- American Board of Preventive Medicine
- American Board of Proctology

For the detail work in preparing the lists of internships, residencies, and the specialty Board requirements, the Council staff is especially indebted to Miss Catherine Hayes, Mrs. Mildred Kaiser, and Mrs. Rose Tracy.

American Board of Psychiatry and Neurology
American Board of Radiology
American Board of Surgery
American Board of Urology
Board of Thoracic Surgery
American College of Physicians
American College of Surgeons

While the Council does not approve internship or residency training programs in Canada, the Directory includes the list of hospitals in the Dominion of Canada with internship programs approved by the Canadian Medical Association.

The Requirements for Certification of the American Specialty Boards contain the essential information found in the special booklets published by the majority of the boards although certain historical data about each board have been omitted. Tables reveal the total certificates awarded in each specialty and the cumulative totals to June 30, 1959.

Internship

The slowly progressive increase in number of internship positions and the number of hospitals having approved internships is revealed in table 1. For the intern year 1958-1959, 12,469 positions were offered, representing an increase of slightly more than 1% over the preceding year. At the same time, the hospitals offering such training decreased from 867 to 853 with the result that the average number of positions per hospital is 14.6, the highest in the past ten years.

Internships, by Type of Service

The following three types of internships are approved by the Council: (1) rotating, which includes training on the medical, surgical, pediatric, and obstetric services; (2) mixed, providing training in two or three of the four major clinical services named above; and (3) straight, providing training on a single medical, surgical, pediatric, obstetrics-gynecology, or pathology service. Straight internships are approved only in hospitals having approved residency programs in the specialties concerned. Because a hospital may offer more than one type of internship, there are accordingly 1,099 approved internship programs in 853 hospitals. The relative distribution of internships according to type reveals that 75% of the programs offer rotating internships, 3% of the programs offer mixed internships, and 22% of the programs offer straight internships. Of the total internship positions available, 87.3% are rotating internships, 1.4% are mixed, and 11.2% are straight internships.

TABLE 1.—*Number of Internships, 1950-1959*

	No. of Hospitals	No. of Internships
1950	799	9,398
1951	828	10,044
1952	865	11,467
1953	856	11,006
1954	844	10,624
1955	850	11,618
1956	867	11,616
1957	852	11,895
1958	867	12,325
1959	853	12,469

TABLE 2.—*Number of Internships, by Type of Service, 1958-1959*

		No. of Internships		
Type of Internship	No. of Approved Programs	Filled Sept. 1, 1958	Vacant Sept. 1, 1958	Percentage Filled
Rotating General	805	8,935	1,882	83
Other Rotating	17	64	9	88
Totals	822	8,999	1,891	83
Mixed	38	166	13	93
Straight				
Internal Medicine	72	593	81	88
Surgery	68	360	60	86
Pediatrics	55	162	46	78
Pathology	34	59	19	76
Obstetrics and Gynecology	10	13	7	65
Totals	239	1,187	213	85
Grand Totals	1,099*	10,352	2,117	83

* Number of approved intern training programs in 853 hospitals.

Table 2 reveals the distribution of internships according to type and reveals the occupancy for each type on Sept. 1, 1958. Rotating internship positions were 83% filled, mixed internships were 93% filled, and straight internships were 85% filled. As in previous years, straight internships in internal medicine showed the highest rate of occupancy, 88%. Straight internships in obstetrics and gynecology were only 65% filled, but this category was added to the approved list only last year.

Of the total of 12,469 internships, 10,352 were filled and 2,117 were vacant. The percentage filled, 83%, is the identical figure for the past four years.

Internships, by Type of Hospital Control

Table 3 classifies internships according to one of the four major types of control. While there was a decrease in the number of nongovernmental hospitals compared to last year, they still comprised the largest group at 673, or 78.8%. The nonfederal governmental hospitals again totaled 133, or 15.5%. Federal hospitals decreased from 41 to 39, comprising 4.5%; and the proprietary hospitals decreased to 8, or 1% of the total.

As of Sept. 1, 1958, the federal hospitals showed the highest occupancy rate at 93%, while the rate in the proprietary hospitals was lowest at 75%.

While internships in the uniformed services of the federal government revealed almost 100% occupancy in all instances, it is apparent the very small number of internships in the Veterans Administration are not popular, since only 44% of the positions offered were filled on Sept. 1, 1958.

The average number of interns on duty in each of the four major groups is for federal hospitals, 15.1; governmental, nonfederal, 24.5; nongovernmental, 9.5; and proprietary, 5.5; with the overall average of 12.1 interns on duty per hospital.

While for the past four years there has been a steady increase in the number of intern positions filled to a high figure of 10,352 positions filled in 1958, the percentage filled has remained steady at 83%.

Table 3.—*Number of Internships, by Type of Hospital Control 1958-1959*

Control	No. of Hospitals	No. of Internships: Filled Sept. 1, 1958	Vacant Sept. 1, 1958	Percentage Filled
Federal				
U. S. Army	10	239*	1	99
U. S. Navy	14	176	0	100
U. S. Air Force	1	24	0	100
U. S. Public Health Service	7	88	0	100
Veterans Administration	4	25	32	44
Other federal	3	40	9	82
Totals	39	592	42	93
Governmental (nonfederal)				
State	31	707	175	80
County	37	947	84	92
City	48	1,282	261	83
City-County	14	270	60	82
Hospital District	3	65	6	92
Totals	133	3,271	586	85
Nongovernmental				
Church	310	2,616	751	78
Nonprofit corporations	363	3,829	723	84
Totals	673	6,445	1,474	81
Proprietary				
Partnership	1	3	5	38
Corporations unrestricted as to profit	7	41	10	80
Totals	8	44	15	75
Grand Totals	853	10,352	2,117	83

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* Includes 60 positions assigned to the U. S. Air Force.

Internships, by Medical School Affiliation and Bed Capacity

Table 4 represents the simplification of a similar table published in past years in that it distinguishes between those affiliated with medical schools and those not affiliated with medical schools and makes no attempt to divide the affiliated hospitals into those which are major hospitals and those which are minor hospitals in relation to responsibility for teaching undergraduate medical students.

This table reveals the popularity of internship appointments in affiliated hospitals. Of the total of 853 hospitals having approved internship programs, only 190 or 22% were affiliated with medical schools. Positions in these affiliated hospitals were 87% filled in contrast to only 81% occupancy in the nonaffiliated hospitals. Twenty-two percent of the total hospitals thus offered 37% of the total positions and secured 39% of the available interns.

For the nonaffiliated hospitals, only 43% had more than 300 beds, while for the affiliated hospitals, 71% were above 300 beds in size. Using percentage of appointments filled as a criterion, the most popular appointments were in the 67 affiliated hospitals with over 500 beds where their percentage occupancy on Sept. 1, 1958, was 90%.

Internships, by Census Region and States

Table 5 indicates the distribution of internships by state and by census region, and the only change in arrangement from last year was the inclusion of Hawaii in the Pacific region.

As was true last year, hospitals in the New England area led the list with 90% of the internship positions filled on Sept. 1, 1958. Both the Mountain States area and the Pacific States area followed close behind with 89% occupancy rate in each region. As was true last year, the East-South Central region had the lowest occupancy rate of 70%. The states having the lowest rates were Montana, Indiana, Alabama, and Oklahoma. The states with a rate of 90% or greater were Connecticut, Massachusetts, New Hampshire, Vermont, New Jersey, New York, District of Columbia, South Carolina, Colorado, New Mexico, Utah, Hawaii, and Washington.

As was true in past years, the three Middle Atlantic states of New Jersey, New York, and Pennsylvania are responsible for more than one-fourth of the internship training activity in the nation since these states had 26% of the hospitals, offered 26% of the positions in approved programs and secured 28% of the applicants as of Sept. 1, 1958.

Table 4.—*Number of Internships, by Medical School Affiliation and Bed Capacity, 1958-1959*

Classification	No. of Hospitals	No. of Internships: Filled Sept. 1, 1958	Vacant Sept. 1, 1958	Percentage Filled
Nonaffiliated				
Less than 200 beds	121	660	152	81
200-299	255	1,846	521	78
300-499	213	2,256	569	80
500-over	74	1,543	266	85
Total	663	6,305	1,508	81
Affiliated				
Less than 200 beds	21	100	41	70
200-299	35	296	77	79
300-499	67	1,071	204	84
500-over	67	2,580	287	90
Totals	190	4,047	609	87
Grand totals	853	10,352	2,117	83

The states of Idaho, Nevada, and Wyoming continued to offer no internship training programs in their hospitals.

Autopsy Rates

Table 6 lists those 20 federal and 20 nonfederal hospitals having the highest autopsy rates for the past year. These are hospitals having approved internship programs, and do not include hospitals having only approved residency training programs.

TABLE 5.—*Number of Internships, by Census Region and State, 1958-1959*

Census Region and State	No. of Hospitals	No. of Internships Filled Sept. 1, 1958	Vacant Sept. 1, 1958	Percentage Filled
New England				
Connecticut	21	212	23	90
Maine	3	17	5	77
Massachusetts	37	383	37	91
New Hampshire	1	16	..	100
Rhode Island	7	60	9	87
Vermont	2	19	2	90
Totals	71	707	76	90
Middle Atlantic				
New Jersey	41	436	50	90
New York	105	1,744	136	93
Pennsylvania	77	689	241	74
Totals	223	2,869	427	87
East North Central				
Illinois	52	697	102	87
Indiana	15	97	85	53
Michigan	38	486	125	80
Ohio	53	652	137	83
Wisconsin	22	154	70	69
Totals	180	2,086	519	80
West North Central				
Iowa	8	74	10	88
Kansas	6	79	25	76
Minnesota	15	202	37	85
Missouri	26	290	150	66
Nebraska	10	59	23	72
North Dakota	3	11	5	69
South Dakota	3	19	4	83
Totals	71	734	254	74
South Atlantic				
Delaware	3	26	8	76
District of Columbia	11	223	13	94
Florida	15	192	31	85
Georgia	17	190	47	80
Maryland	21	257	52	83
North Carolina	11	161	57	74
South Carolina	7	93	10	90
Virginia	19	197	52	79
West Virginia	10	61	29	68
Totals	114	1,400	302	82
East South Central				
Alabama	8	68	51	57
Kentucky	9	71	43	62
Mississippi	2	27	8	77
Tennessee	14	202	55	79
Totals	33	368	157	70
West South Central				
Arkansas	3	57	9	86
Louisiana	10	198	58	77
Oklahoma	7	57	23	57
Texas	27	364	82	82
Totals	47	676	172	80
Mountain				
Arizona	5	44	15	75
Colorado	13	158	15	91
Montana	3	5	5	50
New Mexico	1	10	..	100
Utah	6	86	3	97
Totals	28	303	38	89
Pacific				
California	49	788	103	88
Hawaii	4	72	5	94
Oregon	7	81	20	80
Washington	17	176	17	91
Totals	77	1,117	145	89
Territories and Possessions				
Canal Zone	1	15	..	100
Puerto Rico	8	77	27	74
Totals	9	92	27	77
Grand Totals	853	10,352	2,117	83

The autopsy rate is one useful indication of the "academic climate" in a hospital and reflects the interest of the staff in medical education and in the scientific progress of medicine. While the minimum acceptable autopsy rate is 25%, the Council expects no hospital to be satisfied with a rate maintained at this minimal figure. A rate below this figure may be the basis for withdrawal of approval.

For each group, both the federal and nonfederal hospitals, 14 of the 20 were listed last year.

TABLE 6.—*Internship Hospitals with Highest Autopsy Rates, 1958*

Federal	%
1. U. S. Naval Hospital, Oakland, Calif.	95
2. Walter Reed Army Hospital, Washington, D. C.	93
3. Fitzsimons Army Hospital, Denver	93
4. William Beaumont Army Hospital, El Paso, Texas	91
5. Letterman Army Hospital, San Francisco	90
6. Brooke Army Hospital, San Antonio, Texas	89
7. U. S. Naval Hospital, Charleston, S. C.	88
8. Valley Forge Army Hospital, Phoenixville, Pa.	88
9. U. S. Naval Hospital, Bethesda, Md.	88
10. U. S. Army Hospital, Fort Benning, Ga.	88
11. Madigan Army Hospital, Tacoma, Wash.	87
12. U. S. Naval Hospital, Portsmouth, Va.	86
13. U. S. Naval Hospital, San Diego, Calif.	86
14. U. S Naval Hospital, Chelsea, Mass	85
15. U. S. Public Health Service Hospital, New Orleans, La.	84
16. Veterans Administration Hospital, Dallas, Texas	83
17. U. S. Public Health Service Hospital, Seattle, Wash.	82
18. Tripler Army Hospital, Honolulu, Hawaii	82
19. U. S. Public Health Service Hospital, Staten Island, N. Y.	81
20. U. S. Naval Hospital, Jacksonville, Fla.	80

Nonfederal	
1. Children's Orthopedic Hospital, Seattle, Wash.	94
2. Milwaukee Children's Hospital, Milwaukee, Wis.	91
3. Children's Hospital, Buffalo	91
4. Lower Bucks County Hospital, Bristol, Pa.	88
5. Children's Memorial Hospital, Omaha	88
6. University of California Hospital, Los Angeles	88
7 Mary Hitchcock Memorial Hospital, Hanover, N. H.	87
8. University of California Hospitals, San Francisco	87
9. University of Minnesota Hospitals, Minneapolis	86
10. Children's Hospital, Los Angeles	86
11. Aguadilla District Hospital, Aguadilla, P. R.	84
12. Children's Medical Center, Boston	84
13. St. Louis Children's Hospital, St. Louis	83
14. University of Illinois Research and Educational Hospitals, Chicago	83
15. North Carolina Memorial Hospital, Chapel Hill, N. C.	82
16. Boston Floating Hospital, Boston	82
17. University of Chicago Clinics, Chicago	80
18. Eugene Talmadge Memorial Hospital, Augusta, Ga.	80
19. Greenwich Hospital, Greenwich, Conn.	80
20. Colorado General Hospital, Denver	80

Internship Stipends

For the year 1958-1959, there was a cessation of the steady increase in monthly stipends apparent since 1954. The federal hospitals were not included in calculations of stipends, and these studies pertained to the 805 nonfederal hospitals reporting stipends.

For affiliated hospitals, the average cash stipend per internship for the year beginning July 1, 1958 was $155, a figure identical with the year before. For nonaffiliated hospitals, the average monthly cash stipend was $198, a figure essentially identical with the rate of $197 for the previous year. The average stipend paid by the nonaffiliated hospitals was accordingly $43 more, on the average, than that paid by the affiliated hospitals.

The graph in figure 1 showing maximum monthly internship stipends in increments of $50 reveals that both the affiliated and the nonaffiliated hospitals have a range of stipends showing very similar distributions while the peak for the affiliated hospitals again shows a maximum rate approximately $50 lower than the peak for the nonaffiliated hospitals.

Data on maintenance were available for 804 of the nonfederal hospitals and revealed that in addition to the higher stipends, a higher proportion of the nonaffiliated hospitals provides full maintenance, 81%, than provided by the affiliated hospitals, 66%. A lower proportion of the nonaffiliated hospitals provides partial maintenance, 16%, compared to that provided by the affiliated hospitals, 25%. While only 3% of the nonaffiliated hospitals provided no maintenance, 9% of the affiliated hospitals provided no maintenance. Of the total 804 hospitals offering approved internships, 78% provided full maintenance, 18% partial maintenance, and 3% no maintenance. The Directory of Approved Internships indicates the monthly stipend, and the letters FM and PM indicate whether full maintenance or partial maintenance is provided in addition to the stipend.

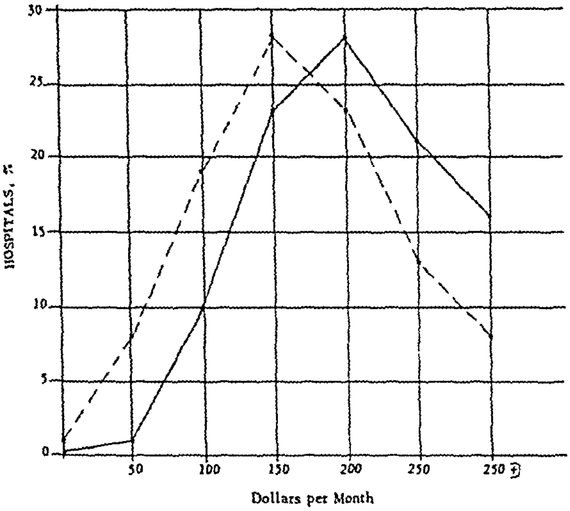

Fig. 1.—Monthly internship stipends for nonfederal hospitals. Solid line indicates nonaffiliated hospitals (627), dashed line, affiliated hospitals (177). Abscissa gives upper level of stipend range.

National Intern Matching Program

The operation of the National Intern Matching Program was fully discussed in last year's annual report referred to earlier. The NIMP is an independent corporation governed by a board of directors with representation of the American Hospital Association, American Medical Association, American Protestant Hospital Association, Association of American Medical Colleges, Catholic Hospital Association, Student American Medical Association, and liaison membership from the federal services having hospital internship programs. The offices of the NIMP are located at 2530 Ridge Ave., Evanston, Ill., and the executive secretary is Ward Darley, M.D. The report of the Seventh National Intern Matching Program was published in January, 1959, in the *Journal of Medical Education,* The Journal of the American Medical Association, and the New Physician. The NIMP performs a very valuable service to hospitals and interns through its matching mechanism, but is also accumulating research data of considerable interest. Several observations from the Seventh National Intern Matching Program Report are emphasized here:

1. The quota saturation percentage for the affiliated hospitals has been increasing and is more favorable than that for the unaffiliated.
2. While more hospitals are offering higher stipends, the increasing high quota saturation for the low as compared with the high stipend hospitals shows that increasing numbers of graduates are attracted to an internship by factors other than stipend.
3. Those hospitals with intern quotas of 20 or more are experiencing a much higher quota saturation than those with less.
4. Without considering the federal services, approximately one-half of the graduates intern outside the state in which their school of graduation is located, one-fourth intern in the hospitals affiliated with their school of graduation, and the other fourth leave the hospitals of their school of graduation but still remain in the state.

The results of the Eighth Annual National Intern Matching Program were published in March, 1959 and showed that there were 12,250 internships to be filled through the plan and 6,478 students matched in the plan. Internships unfilled through the matching plan were therefore 5,772. The number of foreign graduates participating in the matching program for 1959 was sharply reduced because of the requirement for certification by the Educational Council for Foreign Medical Graduates, and as a consequence the total number of interns matched is less than for the previous year. After this year it is expected the number of participating foreign graduates will again be increased.

Foreign Medical Graduates

The Council relies completely on the annual census of foreign interns and residents secured by the Institute of International Education, One East 67th Street, New York 21, New York. For the year 1958-1959, approximately 85% of the hospitals with approved programs reported on the degree of participation of foreign physicians in their training programs. For next year, the census blanks of the

IIE are being mailed with the Council's annual questionnaire in an effort to secure 100% cooperation from the hospitals concerned. The data for those hospitals reporting indicated that for the year 1958-1959, 2,315 foreign medical graduates served as interns in approved training programs.

Residency Training Programs

The first portion of this report on residency programs follows the format of previous years. This will be followed by new information secured in the supplementary questionnaire as well as additional information on foreign medical graduates and the status of graduate training programs since World War II.

TABLE 7.—*Number of Residencies, by Specialty, 1958-1959*

Specialty	No. of Appr. Programs	No. of Residencies					
		First Year Appointments			Total Appointments (All Yr.)		
		Filled Sept. 1, 1958	Vacant Sept. 1, 1958	Percentage Filled	Filled Sept. 1, 1958	Vacant Sept. 1, 1958	Percentage Filled
Allergy	22	17	8	68	26	9	74
Anesthesiology	233	593	97	86	1,132	235	83
Cardiovascular Disease	59	51	3	94	132	8	94
Dermatology	77	117	14	89	295	32	90
Gastroenterology	36	43	4	91	65	10	87
General Practice	200	429	152	74	592	265	69
Internal Medicine	595	2,201	253	90	4,842	764	86
Neurological Surgery	115	79	18	81	301	50	86
Neurology	113	137	38	78	321	97	77
Obstetrics-Gynecology	477	956	67	93	2,406	194	93
Ophthalmology	165	279	16	95	708	55	93
Orthopedic Surgery	286	341	30	92	1,057	130	89
Otolaryngology	131	161	23	88	433	78	85
Pathology	671	762	272	74	1,811	832	69
Pediatric Allergy	12	7	..	100	11	..	100
Pediatrics	291	864	70	93	1,682	199	89
Physical Medicine	67	68	37	65	143	106	57
Plastic Surgery	52	40	6	87	105	14	88
Proctology	13	12	3	80	21	5	83
Psychiatry	288	1,043	287	78	2,770	772	78
Pulmonary Disease	110	189	58	77	281	90	76
Radiology	365	520	155	77	1,389	431	76
Surgery	704	2,019	182	92	5,373	464	92
Thoracic Surgery	100	86	11	89	205	31	87
Urology	227	186	45	81	596	133	82
Totals	5,409	11,200	1,849	86	26,706	5,001	84
Other than hospitals							
Aviation Medicine	3	11	..	100	20	..	100
Occupational Medicine	..	..	..	..	..	..	..
Public Health	21	28	36	44	32	56	36
Totals	24	39	36	52	52	56	48
Grand Totals	5,433	11,239	1,885	86	26,758	5,060	84

Residencies by Specialty

Table 7 differs from the format in previous years only in that the data for hospital specialties precede those in preventive medicine (aviation medicine, occupational medicine, and public health) which are not conducted primarily in hospitals. This table reveals the total number of appointments for each specialty, the number of first year appointments, and the proportion of each filled on September 1, 1958. The number of approved programs increased from 5,299 for 1957-1958 to 5,433 for 1958-1959. The total number of residency positions offered increased by 4% to 31,818. Of this number, 11,239 or 41%, were first year residencies.

Training is offered in 28 specialties including general practice and pediatric allergy. The specialty offering the largest number of residency positions was surgery with 5,837; this was followed by internal medicine with 5,606. In last year's report, obstetrics and gynecology was erroneously reported as holding third position. Actually, psychiatry held third position last year and again this year with 3,542 residencies. Pathology was in fourth position with 2,643 positions; and obstetrics and gynecology was in fifth place with 2,600 positions. The positions offered by these five specialties account for nearly two-thirds of the total number of residencies. An occupancy rate of 90% or higher was shown for aviation medicine, cardiovascular disease, dermatology, obstetrics and gynecology, ophthalmology, pediatric allergy, and surgery. The rate of 36% for public health was again the lowest.

The over-all occupancy rate for all residencies was 84%, a gain of 2% over the previous year.

Residencies, by Type of Hospital Control

Table 8 reveals that 4,678 positions or approximately 15% of all positions are offered by the federal hospitals. Of the 124 federal hospitals offering residency positions, the Veterans Administration Hospitals offer 70%, or 3,263. These positions in Veterans Administration Hospitals were 75% filled on Sept. 1, 1958, and the figure of 2,453 represents 66% of the positions filled in all federal programs and 9% of the positions filled throughout the nation. Nonfederal governmental hospitals offered 11,289, or 35% of the positions while the nongovernmental, nonprofit hospitals offered the largest number of 15,518, or 49% of the positions. The 225 positions in proprietary hospitals represented less than 1% of the total.

The group of nonfederal governmental hospitals had the highest percentage of either of the four groups, 87%, filled on Sept. 1, 1958. Within this group, city hospitals were most successful with 92% occupancy. The nongovernmental nonprofit group of hospitals was next with 84% of the available positions filled, but within that group the church-related hospitals filled only 77% of available positions while the other nonprofit hospitals filled 86%. The group of federal hospitals showed 80% occupancy, with the air force showing the lowest rate of 66% and the navy showing the highest rate of 90%. The overall rate for the proprietary hospitals was lowest of the four groups, being 78%.

Residencies, by Hospital Bed Capacities

Table 9 indicates the number of residencies according to classification by bed capacity. The total number of positions available in all hospitals is 31,713; and of this number, 17,065, or 54%, are offered by the hospitals of over 500 bed capacity. This group of hospitals had filled 87% of its total appointments on Sept. 1, 1958. The highest occupancy rate was 88% for the hospitals of 50 to 99 bed capacity, while the lowest figure of 73% was in the hospitals of less than 50 bed capacity, of which there were 19 with approved programs. Of the 1,265 hospitals offering approved residency training programs, over three-fourths had more than 200 beds.

Residency Stipends

While the Directory of Approved Residencies has listed the beginning stipend for many years, no information has been available on the range of stipends offered in subsequent years of the programs. The supplemental questionnaire referred to earlier attempted to secure information on this subject. Hospitals were asked to list the average stipend which a resident would receive if he were to serve each year of the total period for which each program was approved. Data were secured on the average monthly stipends for 4,358 programs including those Veterans Administration Hospitals which reported but excluded the stipends for the other federal services.

TABLE 8.—*Number of Residencies, by Type of Hospital Control, 1958-1959*

			No. of Residencies					
			First Yr. Appointments			Total Appointments (All Yr.)		
Control	No. of Hospitals	No. of Approved Programs	Filled Sept. 1, 1958	Vacant Sept. 1, 1958	Percentage Filled	Filled Sept. 1, 1958	Vacant Sept. 1, 1958	Percentage Filled
Federal								
U. S. Air Force	4	11	18	5	78	57	29	66
U. S. Army	12	88	270	18	94	549	97	85
U. S. Navy	8	80	128	1	99	406	1	99
U. S. Public Health Service	10	35	59	...	100	158	13	92
Veterans Administration	87	551	827	322	72	2,453	810	75
Other federal	3	18	32	2	94	97	8	92
Totals	124	783	1,334	348	79	3,720	958	80
Governmental (nonfederal)								
State	168	575	1,776	305	85	4,424	816	84
County	67	301	792	100	89	1,733	292	86
City	79	426	1,300	107	92	3,100	264	92
City-county	15	110	175	28	86	375	89	81
Hospital district	7	30	75	9	89	154	22	88
Totals	336	1,442	4,118	549	88	9,786	1,503	87
Nongovernmental nonprofit								
Church operated and church related	298	1,079	1,554	365	81	3,241	964	77
Other nonprofit	482	2,059	4,106	566	88	9,784	1,529	86
Totals	780	3,138	5,660	931	86	13,025	2,493	84
Proprietary								
Individual	2	4	4	...	100	8	2	80
Partnership	1	3	2	2	50	2	2	50
Corporation	22	39	82	19	81	165	46	78
Totals	25	46	88	21	81	175	50	78
Other than hospitals								
Aviation medicine	...	3	11	...	100	20	...	100
Occupational medicine	...	...	...	...	..	...	...	..
Public health	...	21	28	36	44	32	56	36
Totals	...	24	39	36	52	52	56	48
Grand totals	1,265	5,433	11,239	1,885	86	26,758	5,060	84

Of the 4,358 programs reporting analyzable data, 100, or approximately 2% of the total, paid less than $100 per month. 221, or 5%, reported average stipends of greater than $400 per month including three paying over $700, two paying over $800, and one paying over $900.

TABLE 9.—*Number of Residencies, by Bed Capacity, 1958-1959*

			No. of Residencies					
			First Yr. Appointments			Total Appointments (All Yr.)		
Classification	No. of Hospitals	No. of Approved Programs	Filled Sept. 1, 1958	Vacant Sept. 1, 1958	Percentage Filled	Filled Sept. 1, 1958	Vacant Sept. 1, 1958	Percentage Filled
Less than 50 beds	19	25	22	7	76	59	22	73
50-99	63	71	99	16	86	227	30	88
100-199	214	409	751	151	83	1,568	305	84
200-299	312	963	1,374	315	81	3,033	761	80
300-499	331	1,816	3,050	567	84	6,937	1,560	82
Over 500	316	2,111	5,861	784	88	14,766	2,296	87
Other	7	14	40	9	82	116	30	79
Totals	1,265	5,409	11,200	1,849	86	26,706	5,004	84
Other than hospitals								
Aviation Medicine	...	3	11	...	100	20	...	100
Occupational Medicine	...	...	...	...	...	...	...	...
Public Health	...	21	28	36	44	32	56	36
Totals	...	24	39	36	52	52	56	48
Grand Totals	1,265	5,433	11,239	1,885	86	6,758	5,060	84

When divided by IBM methods into programs differing by $50 increments, it was found that 78% of the programs paid between $150 and $350 per month. The actual figures and percentages were: $150-199, 813 programs, 19%; $200-249, 876 programs, 20%; $250-299, 977 programs, 22%; $300-349, 741 programs, 17%.

Maintenance

Data were analyzable from 4,336 programs indicating whether full, partial, or no maintenance was provided in addition to the stipend. Of this total, 2,437 programs or 56% provided full maintenance; 1,090, or 25%, provided partial maintenance; and 809, or 19%, provided no maintenance. Those programs indicating special provisions for married residents were catalogued as providing partial maintenance. It is felt these figures are sufficiently significant to warrant inclusion in future Directories with the initials FM and PM along with the stipends as is now done for the internship listings.

Additional Benefits

The supplementary questionnaire asked hospitals to indicate if Blue Cross or some other form of hospitalization was provided to the residents in addition to the residents' stipend. Of the total of 5,409 programs reported, 2,713 indicated that some form of hospitalization was provided. This is 50% of all the programs offered. The hospitals were also asked whether liability (malpractice) insurance was provided the residents in addition to the residents' stipend, and 1,981 programs, or 37%, replied affirmatively. Many hospitals replied that they carried liability insurance for the hospital, but these replies were not considered in the 37% reported here.

Residency Program Structure

An attempt was made in the supplementary questionnaire to determine the number of programs offering fewer residency positions each successive year in pyramidal fashion, offering reappointments to all residents for each year of the total program in vertical fashion, or following some other scheme. Of the 4,495 programs reporting, the great majority of 3,582, or 80%, indicated their organization was vertical. 560, or 12%, indicated the program structure was pyramidal, and 353, or 8%, indicated some other structure was in effect.

Table 10.—*Foreign Medical Graduates Reported as Residents, by Specialty, 1958-1959*

Allergy	5
Anesthesiology	330
Aviation Medicine	1
Bacteriology	2
Cardiology (includes Cardiovascular Dis.)	43
Chemo-Therapy	6
Dentistry	19
Dermatology	29
Gastroenterology	8
General Medicine (includes those physicians shown only as: Medical, General, or General Medicine)	621
General Practice	235
General Surgery	1,233
Internal Medicine	301
Malignant Diseases (Oncology)	10
Neurology	50
Neurological Surgery	69
Obstetrics and Gynecology	503
Ophthalmology	81
Orthopedics	118
Otolaryngology	96
Pathology	535
Pediatric Allergy	1
Pediatrics	430
Physical Medicine and Rehabilitation	33
Physical Medicine	8
Plastic Surgery	19
Proctology	8
Psychiatry (including Neuro-Psych.)	526
Preventive Medicine	1
Radiology	256
Thoracic Surgery	37
Thoracic Cardiac Research	2
Pulmonary Disease (including 71 in Tb)	113
Urology	127
Hospital Administration	3
Research (Unspecified)	8
Unknown (No field given)	175
Total	6,042

Further analysis of the two programs offering the largest number of appointments, general surgery and internal medicine, revealed that for the 567 surgical programs reported, 64% were vertical, 22% pyramidal, and 13% other. For the 511 internal medicine programs reported, 70% were vertical, 21% pyramidal, and 9% other.

Graduate Trainees Other than Residents

Because the term "fellowship" has come to be interchangeable with the term "residency" in some situations, and therefore leads to confusion, the term has been dropped both from the "Essentials of Approved Residencies" and from the Directory. The supplementary questionnaire attempted to identify the number of fellowship appointments to physicians serving in some other capacity in the hospital than in an approved residency training program. An additional question on "traineeships" was also included to further widen the scope of the inquiry.

While there was difficulty on the part of some hospitals in replying to this question, there were analyzable replies from 5,251 programs reporting residents and additional fellows or trainees. Those hospitals with fellowship and traineeship appointments were almost exclusively affiliated with medical schools. For this group of hospitals reporting on 5,251 residency training programs, there were 15,145 residency positions and 2,410 other types of graduate training appointments. There were 1,672 fellowships and 738 traineeships reported for physicians whose appointments were for other purposes than participation in residency training programs.

Some institutions make fellowship appointments to physicians for the primary purpose of enabling them to receive residency training in approved programs. The Council regards all such positions as residency positions, for purposes of classification. but there is no accompanying intent to change the Council's relationship to programs identified by the sponsoring institution under the term "fellowship".

Since an unknown number of physicians may be pursuing forms of specialty training other than residencies which are fully creditable by the American specialty boards towards certification, questionnaires in future years will attempt more accurately to determine the total of such trainees serving in those hospitals having approved residency training programs. The replies on the stipends for fellowships and traineeships were not analyzable, and no report can therefore be made.

Foreign Medical Graduates

Previous reference has been made to the generous cooperation of the Institute of International Education in providing the Council with data on foreign physicians serving in approved graduate training programs in the United States. During the year 1958-1959, 6,042 foreign graduate physicians served in approved residency training programs. This figure, added to the figure of 2,315 reported in the intern section, means that 8,357 foreign physicians served internships and residencies in the United States in 1958-1959. This figure is a correction of the figures reported in the publication "Open Doors, 1959" of the Institute of International Education where there were an additional 35 positions reported erroneously.

For the academic year 1957-1958, 38% of the foreign medical graduates were in their first year of American graduate training. For the year 1958-

1959, 3,040 foreign graduates (36%) were in their first year of American training. This would appear to indicate that approximately 725 of the foreign medical graduates secured residency appointments in their first year of American training.

Table 10 indicates the distribution of foreign graduates reported to the Institute of International Education who were appointed as residents in hospitals with programs approved by the Council. It will be noted that the specialty designations do not agree in all particulars with those used by the Council, and in some instances must include research assignments in special fields of medicine and even in dentistry and hospital administration.

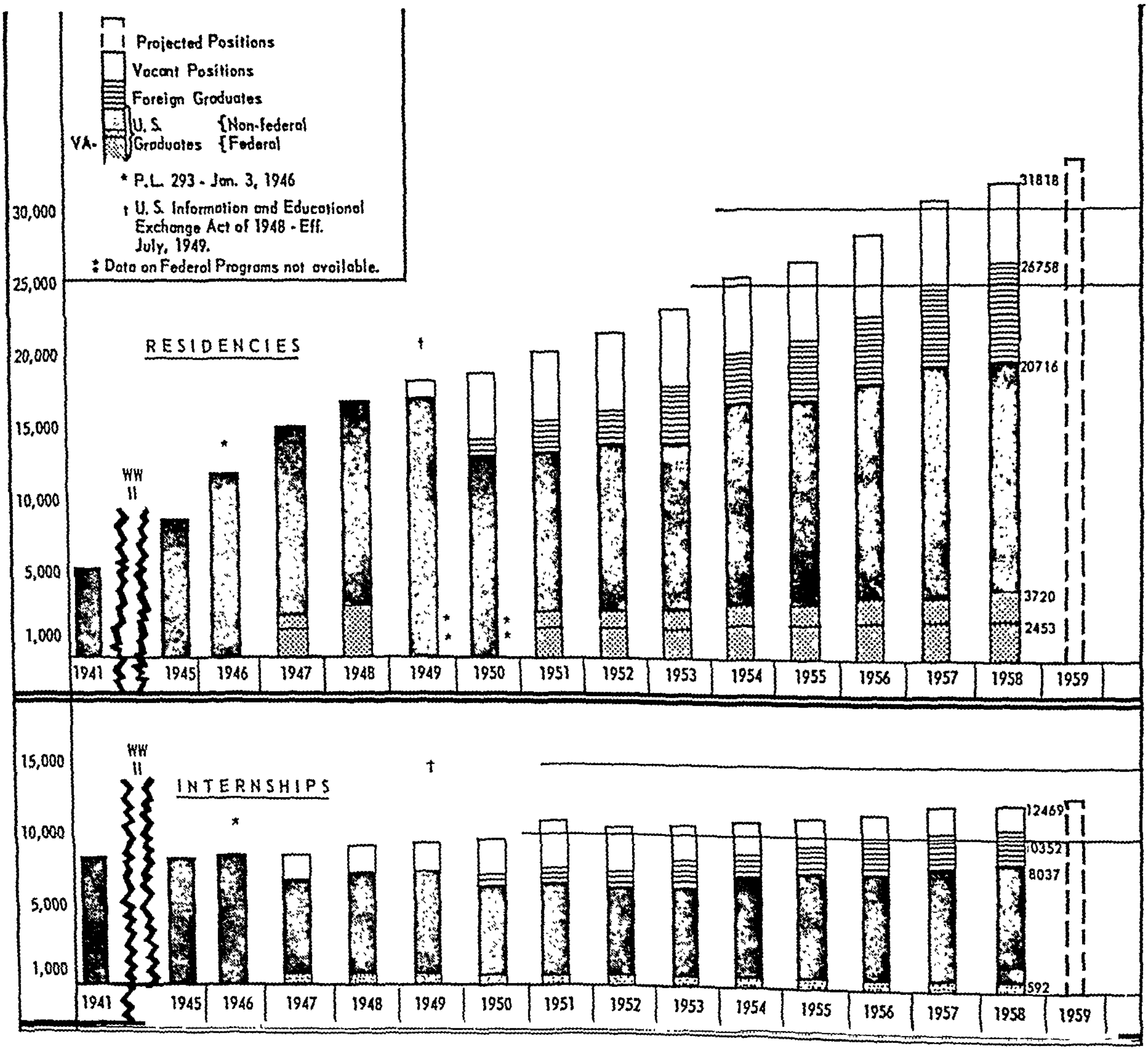

Fig. 2.—Status of Internship and Residency Programs in the United States.

The report for 1960 will indicate those foreign medical graduates appointed for the year 1959-1960 who secured certification by the Educational Council for Foreign Medical Graduates, and will also distinguish between those serving primarily as residents and those serving primarily in research or teaching positions.

Status of Internship and Residency Programs Since World War II

Figure 2 is a composite showing the expansion in graduate training programs which occurred after World War II, and includes not only the proportion of these programs supported by the federal government but also the positions filled by foreign medical graduates.

While the increase in available internships from 1941 to 1958 has been approximately 50%, the increase in residencies from 1941 to 1958 is approximately 500%. Prior to World War II, there were more approved internship appointments available than there were residency appointments. In 1941 there were 8,182 internships, and 5,256 residencies. In the immediate postwar years, even though the federal services inaugurated graduate training programs in 1946, available residency positions had increased over threefold to 17,293 in 1948 with all positions filled. This marked expansion was occasioned by the desire of young physicians discharged from military service to secure specialty training to a degree wholly at variance with the pre-World War II pattern. In 1948, although approximately 3,000 positions were available in federal hospitals, there were still approximately 14,000 positions in nonfederal hospitals in contrast to the 5,256 residencies in 1941, and 8,930 in 1945.

In 1948, a significant step was taken by Congress in passing the United States Information and Educational Exchange Act of 1948, effective in July of 1949. This action facilitated the securing of visas for educational purposes by foreign students, and the chart reveals that the participation of foreign medical graduates in American internship and residency programs first became significant in 1950. For the years 1950 through 1953, the number of approved residencies increased each year, but the number of American graduates securing residency appointments remained almost static. These were the years when the effects of the Korean war were being felt most strongly by training programs, and accordingly there was an increasing demand for foreign graduates to fill the vacancies existing.

Since 1954, there has been a slight increase in the number of American graduates filling internship positions and a more marked increase in those filling residencies. While the number of foreign medical graduates continues to increase each year, the increased total positions offered maintains the proportion of unfilled internships at approximately 2,000 and of unfilled residencies at approximately 5,000.

Figure 2 indicates that the passage of Public Law 293 on January 3, 1946 enabled the Veterans Administration to inaugurate internship and residency training programs. The uniformed federal services also inaugurated such programs in that year. For the past twelve years, therefore, the size of the programs supported by the federal services has remained relatively constant in the face of the slow increase in internships and the continued increase in residencies. While the uniformed services place emphasis on their internship programs, the participation of the Veterans Administration in the conduct of internship programs is almost non-existent. On the other hand, over the years, approximately 70% of the federally supported residency positions are in Veterans Administration Hospitals. Figure 2 makes it clear that the entry of the federal government into the support of internship and residency programs in 1946 was only part of a more general movement on the part of hospitals throughout the United States. It is furthermore clear that once the federally supported programs had attained a fixed level, they varied little from year to year, while approved programs and available positions in nonfederal hospitals have progressively increased at a modest rate for internships but at a startling rate for residencies.

The announcement by the Department of State on April 24, 1959 of the five year limit on the stay of foreign medical graduates serving internships and residencies in this country will undoubtedly reduce the number of foreign graduates attempting to remain in the United States longer than necessary for the purposes of the Exchange-Visitor program authorized by the United States Information and Educational Exchange Act of 1948. There are instances in which foreign medical graduates have served continuously in this country in graduate training programs for as long as ten years. This action of the State Department is in support of the intentions of the Congress of the United States that the exchange-visitor should return to his homeland to foster abroad a better understanding of our way of life.

Résumé

The 33rd annual report contains statistical data bearing on past performance and future trends of approved graduate training programs in the United States, its territories and possessions; it includes the performance data for existing programs for the year 1958-1959 and also the Directory of Approved Internships and Residencies with positions offered for July 1, 1960; and it contains the latest performance figures and requirements for certification of the American specialty boards. This report will be of use to all recent American medical graduates, many foreign medical graduates, and all other personnel concerned with the administration and planning of graduate medical programs.

The number of approved internships, 12,469, increased by only approximately 1% over the preceding year. The number of approved residencies, 31,818, increased by only 4% over the previous year. The occupancy rate for internships remained at 83%, the same figure as for the three previous years. The occupancy rate for residencies as of September 1, 1958 was 84%, an increase of 2% over last year's figure.

At the present time, the number of hospitals and other institutions offering graduate training stands at 1,435. The Directory of Approved Internships and Residencies contained in this annual report indicates that 137 (10%) hospitals offered intern training only, 576 (40%) offered resident training only, and 722 (50%) were approved for both intern and resident training.

APPROVED INTERNSHIPS

Council on Medical Education and Hospitals of the American Medical Association
535 North Dearborn Street, Chicago 10

Revised to September 1, 1959

HOSPITALS, 859 INTERNSHIPS, 12,887

The following general hospitals, investigated and approved by the Council on Medical Education and Hospitals, are considered in position to furnish acceptable intern training in accordance with standards adopted by the American Medical Association. Three types of internships are approved by the Council—rotating, mixed, and straight:

1. A rotating internship is defined as one that provides supervised experience in internal medicine, surgery, pediatrics, obstetrics, and their related subspecialties, together with experience in laboratory and radiologic diagnosis.
2. A mixed internship is defined as one that provides supervised experience in two or more, but not in all, of the clinical divisions named.
3. A straight internship is defined as one that provides supervised experience in a single department, although it may include limited opportunity for work in a related subspecialty. Straight internships are now approved in internal medicine, surgery, pediatrics, pathology, and obstetrics-gynecology.

Hospitals approved for internships that are used by medical schools for undergraduate clinical clerkships on inpatient services have been identified in the following lists by the symbols X and x. Hospitals have been identified with symbol X when a medical school has indicated that the hospital is a major unit in the school's teaching program. Hospitals have been identified with the symbol x when a medical school has indicated that the hospital is used to a limited extent in the school's teaching program. Certain internships in hospitals designated as teaching hospitals may not provide for assignments to teaching services. Other internships may provide for only a portion of the internship period being spent on teaching services. Prospective interns desiring specific information concerning internship assignments to teaching services in a hospital are advised to communicate with the dean of the medical school with which the hospital is affiliated. Medical school affiliations are indicated by footnotes 10 to 92 placed immediately after the symbol X or x. The list of medical schools appears on page 699. The plus (+) sign indicates additional approval for residencies in specialties, as shown in the Council's list of Approved Residencies. The beginning stipends for Federal hospitals have not been listed; they are established in accordance with government pay tables. When applying for internships in Air Force, Army, Navy, or Public Health Service hospitals, applications should be directed to the medical departments of the Air Force, Army, Navy, or the United States Public Health Service and not to the individual hospitals. Although applications are made to the service rather than to individual hospitals, all of the services ask students to list three hospitals in order of preference. Every possible effort is made to place successful candidates in accordance with their desires. Because of the needs of the service it should be understood that students may, in some instances, be assigned to other hospitals than those for which they have indicated preference.

Hospitals listed below (pages 675 to 698) make first year internship appointments through the National Intern Matching Program, Inc. The number and type of internships as listed represent appointments for the intern year 1960-1961.

FEDERAL

Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
UNITED STATES ARMY—Hospitals, 10; Internships, 182										
Letterman Army Hospital +1-4-5 Presidio, San Francisco	Fed	979	11,088	Req	90	12	No	...	182 Rotating General Office of the Surgeon General, Department of the Army Washington 25, D. C. Attn. Chief Personnel Division	00411
Fitzsimons Army Hospital +1-5 Denver 8	Fed	900	8,939	Req	93	12	No	...		
Walter Reed Army Hospital +1-4-5-x19 (Army Medical Center) 6825 16th St. N. W., Washington 12, D. C.	Fed	1,250	14,691	Req	93	12	133	...		
U. S. Army Hospital +1-4-5 Fort Benning, Ga.	Fed	500	10,947	Req	88	12	No	...		
Tripler Army Hospital +1-4-5 Moanalua Gardens, Honolulu, Hawaii	Fed	1,000	18,596	Req	82	12	No	...		
U. S. Army Hospital +1-4-5 Fort Bragg, N. C.	Fed	450	10,400	Req	52	12	No	...		
Valley Forge Army Hospital 1-3-4 Phoenixville, Pa.	Fed	650	4,586	Req	88	12	231	...		
William Beaumont Army Hospital +1-4-5 3600 Hayes Ave., El Paso, Texas	Fed	550	13,824	Req	91	12	No	...		
Brooke Army Hospital +1-4-5 (Brooke Army Medical Center) Ft. Sam Houston, San Antonio, Texas	Fed	900	15,169	Req	88	12	No	...		
Madigan Army Hospital +1-4-5-x90 Fort Lewis, Tacoma 9, Wash.	Fed	500	9,991	Req	87	12	No	...		
UNITED STATES AIR FORCE—Hospitals, 1; Internships, 92										
U. S. Air Force Hospital +4 Lackland Air Force Base San Antonio, Texas	*Fed*	1,000	20,121	*Req*	86	12	No	...	92 Rotating General Directorate of Staffing and Education, Office of the Surgeon General Headquarters, U. S. Air Force Washington 25, D. C.	00311
56 of the above 92 Air Force internships are divided among the Army hospitals listed above.										

Hospitals designated with an asterisk (*) in this listing do not participate in the National Intern Matching Program, sponsored by the American Medical Association, the American Hospital Association, the Association of American Medical Colleges, and other cooperating organizations. Abbreviations and other references will be found on pages 699 through 701.

FEDERAL—Continued

Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
UNITED STATES NAVY—Hospitals, 14; Internships, 176										
U. S. Naval Hospital +1-4-5 8750 Mountain Blvd., Oakland 14, Calif.	Fed	1,325	13,806	Req	95	12	No	...		
U. S. Naval Hospital 1-4 Camp Pendleton, Oceanside, Calif.	Fed	1,109	10,920	Req	67	12	No	...		
U. S. Naval Hospital +1-4 Park Blvd., San Diego 34, Calif.	Fed	2,100	24,961	Req	86	12	No	...		
U. S. Naval Hospital Jacksonville, Fla.	Fed	482	6,804	Req	80	12	No	...		
U. S. Naval Hospital 1 Pensacola, Fla.	Fed	454	6,407	Req	75	12	No	...		
U. S. Naval Hospital +1-4 Great Lakes, Ill.	Fed	975	11,322	Req	68	12	No	...		
U. S. Naval Hospital +1-3-x19 Rockville Pike, Bethesda 14, Md.	Fed	950	12,396	Req	88	12	No	...	176 Rotating General Bur. of Medicine and Surgery Navy Department Washington 25, D. C.	0211
U. S. Naval Hospital +1-3-4-x41 Chelsea, Mass.	Fed	616	7,559	Req	85	12	No	...		
U. S. Naval Hospital +1-4 Linden Blvd., St. Albans 25, N. Y.	Fed	1,325	8,321	Req	78	12	No	...		
U. S. Naval Hospital +1-3-4 17th and Pattison Ave., Philadelphia 45	Fed	1,100	10,972	Req	57	12	No	...		
U. S. Naval Hospital 1 3rd and Cypress Sts., Newport, R. I.	Fed	653	6,643	Req	73	12	No	...		
U. S. Naval Hospital 1-3 Navy Base, Charleston, S. C.	Fed	250	6,081	Req	88	12	No	...		
U. S. Naval Hospital +1-3-4 Portsmouth, Va.	Fed	1,400	18,064	Req	86	12	No	...		
U. S. Naval Hospital 1-3 Naval Base, Bremerton, Wash.	Fed	357	4,328	Req	79	12	No	...		
UNITED STATES PUBLIC HEALTH SERVICE—Hospitals, 7; Internships, 88										
U. S. Public Health Service Hospital +1-4-5 15th Ave. and Lake St., San Francisco 18	Fed	436	4,116	Req	78	12	118	...		
U. S. Public Health Service Hospital +1-3-4 210 State St., New Orleans 18	Fed	400	4,918	Req	84	12	155	...	86 Rotating General 2 Mixed Med. Surg. Public Health Service Hosp. Public Health Service, Department of Health, Education and Welfare Washington 25, D.C. Attn. Chairman Committee on Residents and Interns	0111 0124
U. S. Public Health Service Hospital +1-3-4 Wyman Park Dr. and 31st St., Baltimore 11	Fed	366	4,678	Req	74	12	158	...		
U. S. Public Health Service Hospital +1-3-4 77 Warren St., Boston 35	Fed	248	3,010	Req	67	12	170	...		
U. S. Public Health Service Hospital +1-3-4 Bay St. and Vanderbilt Ave., Staten Island 4, N. Y.	Fed	795	9,380	Req	81	12	229	...		
U. S. Public Health Service Hospital +1-4 Hampton Blvd., Norfolk 8, Va.	Fed	248	3,508	Req	66	12	266	...		
U. S. Public Health Service Hospital +3-4-x89 1131 14th Ave., S. Seattle 44	Fed	325	4,068	Req	82	12	271	...		
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE—Hospitals, 2; Internships, 34										
Freedmen's Hospital +1-3-4-X21 6th and Bryant Sts., N. W., Washington 25, D. C.	Fed	470	10,574	Req	50	12	No	258PM	22 Rotating General	7611
St. Elizabeths Hospital +1-3-4-x20 2600 Nichols Ave., S. E. Washington 20, D. C.	Fed	7,407	1,605	Req	46	12	132	258	12 Rotating General	8011
OTHER FEDERAL—Hospitals, 1; Internships, 16										
Gorgas Hospital +1 Box 503, Balboa Heights, Ancon Canal Zone Personnel Director, Panama Canal Company, Balboa Heights	Fed	324	9,223	Req	76	12	No	289	16 Rotating General	8611

NONFEDERAL AND VETERANS ADMINISTRATION

Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
ALABAMA—Hospitals, 7; Internships, 114										
Birmingham Baptist Hospitals +1-3 708 Tuscaloosa Ave., Birmingham 11	Church	340	14,214	Req	28	12	100	300FM	10 Rotating General	00311
Carraway Methodist Hospital +1 2506 16th Ave. N., Birmingham 4	Church	256	11,489	Req	32	12	No	200FM	9 Rotating General	00611
St. Vincent's Hospital 2701 9th Ct. S., Birmingham 4	Church	200	8,981	Req	38	12	100	225-250FM	8 Rotating General	00511
University Hospital and Hillman Clinic +1-4-X10 619 S. 19th St., Birmingham 3	State	600	25,009	Req	50	12	101	100FM	36 Rotating General 12 Straight Medicine 6 Straight Pediatrics	00711 00732 00734
Lloyd Noland Hospital +1-3 P. O. Box 538, Fairfield	NPCorp	321	10,348	Req	41	12	No	225FM	14 Rotating General	00811
Holy Name of Jesus Hospital 1-3 Moragne Park, Gadsden	Church	140	6,420	None	38	12	No	200PM	4 Rotating General	00911
Mobile General Hospital +1-3 850 St. Anthony St., Mobile 16	CyCo	263	7,708	Req	78	12	No	200FM	15 Rotating General	85211
ARIZONA—Hospitals, 5; Internships, 59										
Good Samaritan Hospital +1 1033 E. McDowell Rd., Phoenix	Church	410	18,449	Req	51	12	102	200PM	15 Rotating General	01111
Maricopa County General Hospital +1-3 3435 W. Durango St., Phoenix	County	429	7,732	Req	45	12	No	150FM	12 Rotating General	80611
St. Joseph's Hospital +1-3 350 W. Thomas Rd., Phoenix	Church	335	18,746	Req	63	12	No	150FM	15 Rotating General	01211
St. Mary's Hospital +1-3 St. Mary's Rd., Tucson	Church	314	15,841	Req	37	12	103	150FM	9 Rotating General	01411
Tucson Medical Center +1-3 E. Grant Rd. and Beverly Blvd., Tucson	NPCorp	237	12,496	Req	52	12	103	150FM	8 Rotating General	01511

Hospitals designated with an asterisk (*) in this listing do not participate in the National Intern Matching Program, sponsored by the American Medical Association, the American Hospital Association, the Association of American Medical Colleges, and other cooperating organizations. Abbreviations and other references will be found on pages 699 through 701.

Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
ARKANSAS—Hospitals, 3; Internships, 64										
Arkansas Baptist Hospital +[1] 1700 W. 13th St., Little Rock	Church	301	17,018	None	20	12	No	275PM	16 Rotating General	[illegible]
St. Vincent Infirmary +[1-3] Markham & Hayes Sts., Little Rock	Church	315	15,251	Req	30	12	104	275PM	12 Rotating General	[illegible]
University Hospital +[1]-X11 4301 W. Markham St., Little Rock	State	335	10,319	Req	61	12	105	150	8 Rotating General 12 Mixed (Med.-Ped.) 4 Straight Medicine 3 Straight Surgery 3 Straight Pediatrics 2 Straight Pathology 4 Straight Ob-Gyn	[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
CALIFORNIA—Hospitals, 45; Internships, 878										
General Hospital of Riverside County +[1]-x12 9851 Magnolia Ave., Arlington	County	380	4,991	Req	40	12	No	214PM	10 Rotating General	[illegible]
Kern County General Hospital +[1-3] 1830 Flower St., Bakersfield	County	547	8,017	Req	53	12	No	250PM	12 Rotating General	[illegible]
Herrick Memorial Hospital +[1-3] 2001 Dwight Way, Berkeley 4	NPCorp	217	8,351	Req	64	12	106	100FM	6 Rotating General	[illegible]
General Hospital of Fresno County +[1-4] 4475 E. Ventura Ave., Fresno 2	County	705	9,672	Req	52	12	No	250PM	18 Rotating General	[illegible]
Glendale Sanitarium and Hospital +[1] 1509 E. Wilson Ave., Glendale 6	Church	292	11,143	Req	60	12	No	300PM	12 Rotating General	[illegible]
Loma Linda Sanitarium and Hospital +[1-3]-x12 Loma Linda	Church	160	7,136	Req	50	12	107	265PM	10 Rotating General	[illegible]
St. Mary's Long Beach Hospital +[3] 509 E. 10th St., Long Beach 13	Church	272	18,186	Req	48	12	No	180-230FM	6 Rotating General	[illegible]
Seaside Memorial Hospital +[1-3] 1401 Chestnut Ave., Long Beach 13	NPCorp	370	19,463	Req	36	12	107	200PM	12 Rotating General	[illegible]
California Hospital +[1-3] 1414 S. Hope St., Los Angeles 19	Church	304	13,987	Req	52	12	108	200FM	8 Rotating General	[illegible]
Cedars of Lebanon Hospital +[1-3] 4833 Fountain Ave., Los Angeles 29	NPCorp	479	17,423	Req	53	12	107	110FM	15 Rotating General	[illegible]
Childrens Hospital +[1]-X14 4614 Sunset Blvd., Los Angeles 27	NPCorp	220	8,527	Req	80	12	No	125PM	4 Straight Pediatrics	[illegible]
Hospital of the Good Samaritan +[1-3] 1212 Shatto St., Los Angeles 17	Church	491	16,112	Req	45	12	109	200FM	8 Rotating General	[illegible]
Los Angeles County Hospital (Medical Unit) +[1]-X12-14-x13 1200 N. State St., Los Angeles 33	County	2,909	89,795	Req	40	12	No	165PM	160 Rotating General 8 Straight Medicine	[illegible] [illegible]
Presbyterian Hospital—Olmsted Memorial +[1-3] 1322 N. Vermont Ave., Los Angeles 27	Church	284	11,164	Req	35	12	No	140FM	10 Rotating General	[illegible]
Queen of Angels Hospital +[1-3] 2301 Bellevue Ave., Los Angeles 26	Church	444	18,802	Req	47	12	No	225FM	16 Rotating General	[illegible]
St. Vincent's Hospital +[1-3] 2131 W. 3rd St., Los Angeles 57	Church	300	11,889	None	37	12	109	250FM	6 Rotating General	03711
Santa Fe Coast Lines Hospital +[1-3] 610 S. St. Louis St., Los Angeles 23	NPCorp	196	5,277	Req	56	12	110	200FM	9 Rotating General	[illegible]
University of California Hospital +[1-3]-X13 10833 Le Conte Ave., Los Angeles 24	NPCorp	316	9,092	Req	88	12	No	185	12 Straight Medicine 8 Straight Surgery 6 Straight Pediatrics 2 Straight Pathology	[illegible] [illegible] [illegible] [illegible]
Veterans Administration Hospital +[1-4-5]-X13 Wilshire and Sawtelle Blvds., Los Angeles 25	Fed	1,576	11,155	None	75	12	111	208FM	24 Rotating General 6 Straight Medicine	[illegible] [illegible]
White Memorial Hospital +[1-3]X12 1720 Brooklyn Ave., Los Angeles 33	Church	243	10,796	Req	69	12	No	205PM	16 Rotating General	01011
Highland-Alameda County Hospital +[1-3] 2701 14th Ave., Oakland 6	County	436	14,022	Req	59	12	112	116FM	31 Rotating General	04111
Orange County General Hospital +[1-3-4] 101 Placentia Ave., Orange	County	571	6,273	Req	65	12	113	300	26 Rotating General	01311
Palo Alto-Stanford Hospital Center + 300 Pasteur Drive, Palo Alto Dr. Robert Alway, Dean Stanford University School of Medicine Stanford	NPCorp	.....	......	Req	...	..	...	...	7 Straight Medicine 7 Straight Surgery	[illegible] [illegible]
Collis P. and Howard Huntington Memorial Hospital +[1-3] 100 Congress St., Pasadena 2	NPCorp	282	11,073	Req	58	12	114	250FM	9 Rotating General	04411
Sacramento County Hospital +[1-3] 2315 Stockton Blvd., Sacramento 17	County	947	14,722	Req	53	12	No	157FM	26 Rotating General	04611
San Bernardino County Charity Hospital +-x12 780 E. Gilbert St., San Bernardino	County	419	7,481	Req	55	12	No	150PM	16 Rotating General	04711
Mercy Hospital +[1-3] Hillcrest Dr., San Diego 3	Church	325	18,623	Req	62	12	No	150FM	12 Rotating General	04511
San Diego County General Hospital +[1] N. End of Front St., San Diego 3	County	616	8,901	Req	40	12	No	200FM	15 Rotating General	04911
Children's Hospital +[1-3] 3700 California St., San Francisco 18	NPCorp	237	10,313	Req	60	12	No	125FM	6 Rotating General	05011
French Hospital +[1-3] 4131 Geary Blvd., San Francisco 18	NPCorp	196	6,890	Req	39	12	240	125FM	10 Rotating General	05211
Kaiser Foundation Hospital +[1-3] 2425 Geary Blvd., San Francisco 15	NPCorp	216	10,626	Req	75	12	No	125PM	20 Rotating General	05911
Mary's Help Hospital +[1-3] 145 Guerrero St., San Francisco 3	Church	179	7,762	Req	38	12	No	150FM	6 Rotating General	05311
Mount Zion Hospital +[1-3] 1600 Divisadero St., San Francisco 15	NPCorp	351	12,146	Req	66	12	No	100FM	18 Rotating General	05411
St. Joseph's Hospital +[1-3] Buena Vista Ave., San Francisco 17	Church	215	8,295	Req	32	12	No	150FM	6 Rotating General	05511
St. Luke's Hospital +[1-3] 1580 Valencia St., San Francisco 10	Church	235	10,548	Req	47	12	No	300FM	10 Rotating General	05611
St. Mary's Hospital +[1-3] 2200 Hayes St., San Francisco 17	Church	348	12,840	Req	69	12	No	150FM	1 Straight Pathology 15 Rotating General	05636 05711

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Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
CALIFORNIA—Continued										
San Francisco General Hospital $^{+1-3-4}$-X16.... 1001 Potrero Ave., San Francisco 10	CyCo	914	19,194	Req	58	12	115	160	48 Rotating General 12 Mixed (Med. Surg.)	05811 05821
San Francisco-Stanford Hospitals $^{+1-3-4}$...... Clay and Webster St., San Francisco 15	NPCorp	351	12,033	Req	65	12	No	160	12 Rotating General	05911
Southern Pacific General Hospital $^{+1-3}$........ 1400 Fell St., San Francisco 17	NPCorp	450	6,813	Req	73	12	116	125FM	25 Rotating General	06011
University of California Hospitals $^{+1-3}$-X16.... (Herbert C. Moffitt Hospital) Parnassus and 1st Aves., San Francisco 22 Dr. Saunders, Dean University of California School of Medicine, San Francisco	NPCorp	474	12,121	Req	87	12	117	186	16 Straight Medicine 17 Straight Surgery 6 Straight Pediatrics 3 Straight Pathology	06132 06133 06134 06136
Santa Clara County Hospital $^{+1-4}$........... Los Gatos Rd., San Jose 28	County	425	6,217	Req	68	12	No	135FM	20 Rotating General	06311
Santa Barbara Cottage Hospital $^{+1-3}$........ 320 W. Pueblo St., Santa Barbara	NPCorp	219	7,311	Req	50	12	119	175-200FM	10 Rotating General	06411
Santa Monica Hospital $^{1-3}$...................... 1250 16th St., Santa Monica	Church	235	15,639	Req	43	12	120	200FM	8 Rotating General	06511
San Joaquin General Hospital $^{+1}$............. P. O. Box 1890, Stockton	County	632	7,791	Req	66	12	No	175PM	15 Rotating General	06611
Harbor General Hospital $^{+1-4}$-X13............ 1124 W. Carson St., Torrance	County	751	11,811	Req	51	12	No	160FM	38 Rotating General	06711
COLORADO—Hospitals, 12; Internships, 160										
Penrose Hospital $^{+1-3}$......................... 2215 No. Cascade Ave., Colorado Springs	Church	175	6,383	Req	65	12	121	150FM	4 Rotating General	06811
General Rose Memorial Hospital $^{+1-3}$......... 1050 Clermont St., Denver 20	NPCorp	250	11,901	Req	62	12	122	250FM	10 Rotating General	06911
Mercy Hospital $^{+1-3}$.......................... 1619 Milwaukee St., Denver 6	Church	250	11,456	Req	57	12	No	150FM	9 Rotating General	92211
Porter Sanitarium and Hospital $^{+1-4}$.......... 2525 S Downing St., Denver 10	Church	217	10,000	Req	57	12	No	150FM	10 Rotating General	07111
Presbyterian Hospital $^{+1-4}$..................... 19th Ave. and Gilpin St., Denver 18	Church	198	8,987	Req	69	12	123	215PM	14 Rotating General	07211
St. Anthony Hospital $^{+1-3}$...................... W. 16th and Quitman Sts., Denver 4	Church	258	14,776	Req	62	12	No	250FM	10 Rotating General	07311
St. Joseph's Hospital $^{+1-3}$..................... 1818 Humboldt St., Denver 18	Church	380	18,415	Req	62	12	124	150FM	14 Rotating General	07411
St. Luke's Hospital $^{+1}$.......................... 601 E. 19th Ave., Denver 3	Church	442	18,303	Req	64	12	125	215PM	14 Rotating General	07511
University of Colorado Medical Center Colorado General Hospital $^{+1}$-X17........... 4200 E. 9th Ave., Denver 20	State	284	7,431	None	80	12	No	105PM	18 Rotating General 2 Straight Surgery 2 Straight Pediatrics	07611 07633 07634
Denver General Hospital $^{+1-3-4}$-X17......... W. 6th Ave. and Cherokee St., Denver 4	CyCo	430	9,428	Req	56	12	204	50PM	24 Rotating General 16 Community Rot. 2 Straight Pediatrics	07711 07710 07734
Weld County General Hospital ^{1}.............. 1801 16th St., Greeley	County	250	8,445	Req	39	12	No	150FM	3 Rotating General	85311
St. Mary-Corwin Hospital $^{+1}$................. 1008 Minnequa, Pueblo	Church	318	12,910	Req	31	12	No	210PM	8 Rotating General	07811
CONNECTICUT—Hospitals, 21; Internships, 232										
Bridgeport Hospital $^{+1-3}$....................... 267 Grant St., Bridgeport 10	NPCorp	388	15,232	Req	40	12	No	190FM	14 Rotating General	07911
St. Vincent's Hospital $^{+1-3}$.................... 2820 Main St., Bridgeport 6	Church	368	15,884	Req	48	12	No	250PM	15 Rotating General	08011
Bristol Hospital $^{1-3}$............................ Newell Rd., Bristol	NPCorp	170	7,559	Req	23	12	No	150FM	6 Rotating General	92311
Danbury Hospital $^{+1-3}$......................... 95 Locust Ave., Danbury	NPCorp	171	6,856	Req	19	12	No	200FM	7 Rotating General	08111
Griffin Hospital $^{+1-3}$.......................... Seymour Ave. and Division St., Derby	NPCorp	161	5,739	Req	38	12	126	200FM	7 Rotating General	97711
Greenwich Hospital $^{+1-3}$...................... Perryridge Rd., Greenwich	NPCorp	215	8,377	Req	80	12	127	100FM	10 Rotating General	08211
Hartford Hospital $^{+1-3-4}$..................... 80 Seymour St., Hartford 15	NPCorp	840	31,099	Req	66	12	No	100FM	18 Rotating General	08311
Hartford Municipal Hospital and Health Center $^{+1-3}$......................... 2 Holcomb St., Hartford 5	City	211	3,711	Req	33	12	No	216FM	9 Rotating General	08411
Mount Sinai Hospital $^{1-3}$...................... 500 Blue Hills Ave., Hartford 12	NPCorp	115	5,463	Req	49	12	No	260FM	6 Rotating General	85411
St. Francis Hospital $^{+1-3-4}$................... 114 Woodland St., Hartford 5	Church	578	20,165	Req	69	12	No	150-225FM	13 Rotating General	08511
Manchester Memorial Hospital $^{1-3}$........... 71 Haynes St., Manchester	NPCorp	189	9,614	Req	44	12	128	245-300PM	5 Rotating General	87511
Meriden Hospital $^{+1-3}$......................... 181 Cook Ave., Meriden	NPCorp	263	7,469	Req	41	12	No	150FM	5 Rotating General	08611
Middlesex Memorial Hospital $^{+1-3}$............ 28 Crescent St., Middletown	NPCorp	168	8,060	Req	51	12	No	200FM	6 Rotating General	08711
New Britain General Hospital $^{+1-3}$........... 92 Grand St., New Britain	NPCorp	292	11,233	Req	64	12	No	181FM	9 Rotating General	08811
Grace-New Haven Community Hospital $^{+1-3-4}$-X18.......................... 789 Howard Ave., New Haven 4	NPCorp	662	21,345	Req	71	12	129	25FM	18 Straight Medicine 16 Straight Surgery 8 Straight Pediatrics 7 Straight Pathology	08932 08933 08934 08936
Hospital of St. Raphael $^{+1-3-4}$............... 1450 Chapel St., New Haven 11	Church	370	13,444	Req	52	12	No	250PM	15 Rotating General	09011
Lawrence and Memorial Hospitals $^{+1-3}$........ 365 Montauk Ave., New London	NPCorp	218	10,591	Req	59	12	No	200FM	4 Rotating General	09211
Norwalk Hospital $^{+1-3}$.......................... 24 Stevens St., Norwalk	NPCorp	300	12,238	Req	51	12	No	160FM	6 Rotating General	09311

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CONNECTICUT—Continued										
Stamford Hospital +$^{1-3}$ 190 W. Broad St., Stamford	NPCorp	310	10,011	Req	69	12	No	100FM	10 Rotating General	09511
St. Mary's Hospital +$^{1-3-4}$ 56 Franklin St., Waterbury 6	Church	315	12,173	Req	40	12	No	200FM	9 Rotating General	09611
Waterbury Hospital +$^{1-3-4}$ 61 Robbins St., Waterbury 8	NPCorp	374	13,149	Req	50	12	No	200FM	9 Rotating General	09711
DELAWARE—Hospitals, 3; Internships, 34										
Delaware Hospital +$^{1-3-4}$ 501 W. 14th St., Wilmington 1	NPCorp	370	13,119	Req	61	12	No	100-200FM	16 Rotating General	09811
Memorial Hospital +$^{1-3-4}$ 1501 Van Buren St	NPCorp	372	10,189	Req	50	12	No	190FM	12 Rotating General	09911
Wilmington General Chestnut at Broom St., Wilmington 6	NPCorp	317	7,511	Req	55	12	No	190-260FM	6 Rotating General	10011
DISTRICT OF COLUMBIA—Hospitals 8; Internships, 181										
District of Columbia General Hospital +$^{1-3-4}$-X19-20-x21 19th and E Sts. S.E., Washington 3	City	1,118	21,322	Req	52	12	No	208	....	79011
[illegible]ce	....	.....	......	....	...	..	...	...	22 Rotating General	.....
[illegible]ity Service	....	.....	......	....	...	..	...	...	22 Rotating General	.....
[illegible]	....	.....	......	....	...	..	...	...	12 Rotating General	.....
[illegible]	Corp	235	9,000	Req	63	12	130	150FM	10 Rotating General	79711
[illegible] [illegible]ashington 7	Church	363	13,165	Req	71	12	131	150-170PM	8 Straight Medicine 6 Mixed (Med.-Surg.)	80132 80121
[illegible] Hospital [illegible]-X20 901 23rd St. N.W., Washington 7	NPCorp	420	16,203	Req	72	12	132	125PM	13 Rot. (Med.-Major) 12 Rot. (Surg.-Major) 2 Rot. (Path.-Major)	80212 80213 80236
Providence Hospital +$^{3-4}$ 1150 Varnum St. N.E., Washington 17	Church	350	16,058	Req	67	12	No	300PM	18 Rotating General	80311
Sibley Memorial Hospital +$^{1-3}$ 1150 N. Capitol St., Washington 2	Church	248	10,035	Req	49	12	130	100FM	10 Rotating General	80511
W[illegible] Hospital Center +$^{1-3-4}$ [illegible] Emergency Hospital [illegible] Hospital) 110 Irving St. N.W., Washington 10	NPCorp	773	21,168	Req	61	12	130	200FM	30 Rotating General 6 Straight Surgery	80011 80023
Was[illegible] Hospital $^{1-3}$ [illegible] Park, W[illegible] 12	Church	260	10,250	Req	47	12	161	225PM	10 Rotating General	25411
FLORIDA—Hospitals, 13; Internships, 217										
Baptist Memorial Hospital +$^{1-3}$ 800 Miami Rd., Jacksonville 7	Church	273	12,830	Req	62	12	No	300	12 Rotating General	97011
Duval Medical Center +$^{1-3}$ 2000 Jefferson St., Jacksonville 6	County	335	8,641	Req	40	12	No	175FM	20 Rotating General	10111
St. Luke's Hospital +$^{1-3}$ 8th St. and Boulevard, Jacksonville 8	NPCorp	210	10,349	Req	32	12	134	300	4 Rotating General	10211
St. Vincent's Hospital +^{3} Barrs and St. Johns Ave., Jacksonville 4	Church	360	16,748	Req	47	12	No	300PM	14 Rotating General	10311
Jackson Memorial Hospital +$^{1-4}$-X23 1700 N.W. 10th Ave., Miami 36	County	939	30,987	Req	76	12	135	180-220PM	60 Rotating General 12 Straight Medicine 2 Straight Pediatrics 5 Straight Surgery	10411 10432 10434 10433
Mount Sinai Hospital of Greater Miami +$^{1-3}$ 4300 Alton Rd., Miami Beach 40	NPCorp	258	10,327	Req	48	12	135	150FM	18 Rotating General	10511
St. Francis Hospital +$^{1-3}$ 250 W. 63rd St., Miami Beach 41	Church	250	9,426	Req	31	12	135	135FM	8 Rotating General	10611
Orange Memorial Hospital +^{1} 1416 S. Kuhl Ave., Orlando	NPCorp	400	17,478	Req	41	12	No	300	12 Rotating General	10711
Sacred Heart Hospital +$^{1-3}$ 1010 N. 12th Ave., Pensacola	Church	145	6,996	Req	42	12	136	200FM	3 Rotating General	10811
Mound Park Hospital +$^{1-3}$ 7th St. and 6th Ave. S., St. Petersburg 5	City	411	15,122	Req	30	12	No	260PM	14 Rotating General	91111
Tampa General Hospital +^{1} Davis Islands, Tampa 6	City	345	14,880	Req	47	12	137	200FM	22 Rotating General	10911
Good Samaritan Hospital ^{1} 1300 N. Dixie Hwy., West Palm Beach	NPCorp	230	10,054	Req	24	12	No	200FM	5 Rotating General	98411
St. Mary's Hospital ^{1} 900 49th St., West Palm Beach	Church	250	7,683	Req	40	12	No	200PM	6 Rotating General	91411
GEORGIA—Hospitals, 16; Internships, 235										
Athens General Hospital $^{1-3}$ 797 Cobb St., Athens	County	150	5,957	Req	28	12	No	330	5 Rotating General	85611
St. Ma[illegible] 360 [illegible]	Church	100	4,815	Req	42	12	241	300PM	6 Rotating General	11011
Crawf[illegible] Hospital +$^{1-3}$ 35 [illegible] 3	Church	514	22,225	Req	38	12	138	275	18 Rotating General	11111
Georgi[illegible] 300 [illegible] 12	Church	475	23,145	Req	64	12	No	280	20 Rotating General	11211
Grady [illegible] X.4 80 [illegible]	County	678	20,851	Req	40	12	No	75FM	20 Rotating General 16 Straight Medicine 12 Straight Surgery 4 Straight Pediatrics	11311 11332 11333 11334
Pi[illegible] [illegible]nta 9	NPCorp	213	9,396	Req	53	12	138	275PM	10 Rotating General	11411
[illegible]	Church	303	14,160	Req	53	12	No	255PM	12 Rotating General	11511
[illegible] +^{1}-X24 [illegible] Peachtree Rd. N.E., Atlanta 19	Fed	300	3,889	Req	64	12	138	...	7 Straight Medicine	11732
Eugene Talmadge Memorial Hospital +^{1}-X25 1120 15th St., Augusta	State	406	4,596	Req	80	12	No	167	4 Straight Medicine	98532
University Hospital +$^{1-3}$-X25 University Pl., Augusta	City	425	14,159	Req	43	12	No	200PM	18 Rotating General	11611

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GEORGIA—Continued										
Medical Center +1-3 700 19th St., Columbus	City	300	11,918	Req	31	12	No	200FM	12 Rotating General	11811
Emory University Hospital +1-3-X24 Emory University	NPCorp	315	10,841	Req	56	12	No	225	15 Straight Medicine 6 Straight Surgery 2 Straight Pathology	11932 11933 1193[illegible]
Macon Hospital +1 777 Hemlock St., Macon	CyCo	500	18,772	Req	22	12	No	200FM	24 Rotating General	13411
Kennestone Hospital 1-3 1207 Church St., Marietta	City	175	11,544	Req	33	12	No	175FM	10 Rotating General	98411
Floyd Hospital 1-3 Turner and McCall Blvd., Rome	County	180	9,923	Req	31	12	No	250FM	4 Rotating General	96211
Memorial Hospital of Chatham County +1-3 63rd St. and Waters Ave., Savannah	Dist	300	8,194	Req	59	12	No	250FM	10 Rotating General	95111
HAWAII—Hospitals, 3; Internships, 41										
*Kuakini Hospital 1-3 317 N. Kuakini St., Honolulu 17	NPCorp	140	8,432	Req	55	24	281	100FM	14 Rotating General	.....
Queen's Hospital +1 1301 Punchbowl St., Honolulu 9	NPCorp	395	17,288	Req	56	12	No	100FM	15 Rotating General	85311
St. Francis Hospital +1-3 2260 Liliha St., Honolulu 17	Church	219	10,771	Req	54	12	No	225FM	12 Rotating General	86111
ILLINOIS—Hospitals, 51; Internships, 810										
MacNeal Memorial Hospital +1-3 3249 S. Oak Park Ave., Berwyn	NPCorp	276	12,700	Req	38	12	No	225FM	12 Rotating General	12111
St. Francis Hospital 1-3 12948 S. Gregory St., Blue Island	Church	160	7,369	Req	38	12	139	175FM	6 Rotating General	93211
American Hospital +1-3 850 W. Irving Park Rd., Chicago 13	NPCorp	158	5,431	Req	42	12	No	50FM	5 Rotating General	12311
Augustana Hospital +1-3 411 W. Dickens Ave, Chicago 14	Church	320	9,053	Req	50	12	No	150FM	10 Rotating General	12411
Chicago Wesley Memorial Hospital +1-3-X27 250 E. Superior St., Chicago 11	Church	560	17,064	None	69	12	140	100FM	24 Rotating General	16211
Columbus Hospital +3 2520 N. Lakeview Ave., Chicago 14	Church	392	11,470	None	43	12	141	125FM	20 Rotating General	12511
Cook County Hospital +1-X26-27-28-30 1825 W. Harrison St., Chicago 12	County	3,200	80,633	Req	31	12	No	110FM	124 Rotating General	12711
Edgewater Hospital +1-3 5700 N. Ashland Ave., Chicago 26	NPCorp	290	11,964	Rep	46	12	No	100FM	16 Rotating General	12811
Englewood Hospital +1-3 6001 S. Green St., Chicago 21	NPCorp	160	6,593	None	11	12	No	150FM	6 Rotating General	12911
Evangelical Hospital 1-3 5421 S. Morgan St., Chicago 9	Church	195	8,009	Req	38	12	No	150-200FM	7 Rotating General	13011
Grant Hospital +1-3-x30 551 W. Grant Pl., Chicago 14	NPCorp	258	9,125	Req	48	12	140	200FM	11 Rotating General	13211
Hospital of St. Anthony de Padua +1-3 2875 W. 19th St., Chicago 23	Church	217	8,097	Req	42	12	141	200FM	8 Rotating General	13511
Illinois Central Hospital +1-3-x30 5800 Stony Island Ave, Chicago 37	NPCorp	312	7,436	Req	16	12	143	244FM	14 Rotating General	13611
Illinois Masonic Hospital +1-3 836 Wellington Ave., Chicago 14	NPCorp	360	12,807	Req	49	12	No	100FM	12 Rotating General	13711
Jackson Park Hospital 1-3 7531 Stony Island Ave., Chicago 49	Corp	116	3,873	None	34	12	No	150FM	8 Rotating General	13811
Loretto Hospital +1-3-x28 645 S. Central Ave., Chicago 44	Church	150	5,405	Req	16	12	No	150FM	7 Rotating General	13911
Lutheran Deaconess Home and Hospital +3 1138 N. Leavitt St., Chicago 22	Church	186	6,530	Req	39	12	No	150FM	6 Rotating General	14011
Mercy Hospital +1-3-X28 2537 S. Prairie Ave., Chicago 16	Church	356	8,863	Req	52	12	No	200FM	15 Rotating General	14111
Michael Reese Hospital +1-3-X26x27 2839 S. Ellis Ave., Chicago 16	NPCorp	880	21,236	Req	63	12	No	100FM	42 Rotating General 2 Straight Medicine 1 Straight Surgery 1 Straight Pediatrics	14211 14232 14233 14234
Mount Sinai Hospital +1-3-X26 2750 W. 15th Pl., Chicago 8	NPCorp	392	12,866	Req	15	12	No	175PM	14 Rotating General	14411
Norwegian-American Hospital +1-3 1044 N. Francisco Ave., Chicago 22	NPCorp	171	6,547	Req	31	12	144	200FM	11 Rotating General	14511
Passavant Memorial Hospital +1-3-X27 303 E. Superior St., Chicago 11	NPCorp	285	8,504	None	72	12	140	100FM	18 Rotating General	14611
Presbyterian-St. Luke's Hospital +1-X30 1753 W. Congress St., Chicago 12	NPCorp	463	12,462	Req	70	12	No	100FM	39 Rotating General	14711
Provident Hospital +1-3 426 E. 51st St., Chicago 15	NPCorp	205	7,681	Req	41	12	No	175FM	10 Rotating General 1 Straight Surgery	14811 14833
Ravenswood Hospital +1-3 1931 Wilson Ave., Chicago 40	NPCorp	250	9,285	Req	59	12	No	175FM	8 Rotating General	14911
Resurrection Hospital 3 7435 W. Talcott Ave., Chicago 31	Church	190	9,338	Req	69	12	No	250FM	12 Rotating General	93711
St. Anne's Hospital +1-3 4950 W. Thomas St., Chicago 51	Church	322	13,198	Req	39	12	No	200FM	12 Rotating General	15211
St. Bernard's Hospital 1-3 6337 S. Harvard Ave., Chicago 21	Church	181	6,244	None	26	12	No	150FM	8 Rotating General	15311
St. [illegible]	Church	266	10,229	None	31	12	No	200FM	10 Rotating General	15411
St. [illegible] 2100 N. Burling St., Chicago 14	Church	200	6,942	Req	53	12	No	225FM	8 Rotating General	15511
St. Mary of Nazareth Hospital +1-3 1120 N. Leavitt St., Chicago 22	Church	264	8,895	Req	40	12	No	200FM	10 Rotating General	15711
South Chicago Community Hospital 3 2320 E. 93rd St., Chicago 17	NPCorp	250	10,274	Req	27	12	No	150FM	12 Rotating General	15811
South Shore Hospital +1-3 8015 Luella Ave., Chicago 17	NPCorp	175	7,487	Req	35	12	No	200FM	7 Rotating General	92511
Swedish Covenant Hospital +1-3 5145 N. California Ave., Chicago 25	Church	225	7,057	Req	50	12	No	200PM	9 Rotating General	15911
University of Chicago Clinics +1-3-4-X29 950 E. 59th St., Chicago 37	NPCorp	700	16,780	Req	80	12	No	150PM	36 Rotating General 2 Straight Pediatrics	16011 16034

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Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
ILLINOIS—Continued										
University of Illinois Research and Educational Hospitals +[1-3-4]-X30............ 840 S. Wood St., Chicago 12	State	625	11,661	Req	83	12	No	70FM	36 Rotating General	15011
Woodlawn Hospital +[1-3]........................... 6060 Drexel Ave., Chicago 37	NPCorp	150	4,150	Req	77	12	No	150PM	6 Rotating General	16411
Decatur and Macon County Hospital +........ 2300 N. Edward St., Decatur	NPCorp	330	11,201	Req	41	12	No	225FM	9 Rotating General	85711
St. Mary's Hospital [1-3]......................... 129 N. 8th St., East St. Louis	Church	330	11,957	Req	28	12	No	150FM	12 Rotating General	16511
Memorial Hospital of Du Page County [1-3].... 315 Schiller St., Elmhurst	NPCorp	277	11,789	Req	44	12	No	200FM	12 Rotating General	16611
Evanston Hospital +[1-3]-X27................... 2650 Ridge Ave., Evanston	NPCorp	321	11,886	None	79	12	140	200PM	24 Rotating General	16711
St. Fra[illegible] +[1-3] 355	Church	396	15,130	Req	67	12	No	250FM	12 Rotating General	16811
Little C[illegible] +[1-3]........ 2800 [illegible] 42	Church	455	19,859	Req	43	12	No	150FM	24 Rotating General	16911
Hinsda[illegible] -[3]......... 120 N. Oak St., Hinsdale	Church	195	7,633	Req	45	12	No	300	8 Rotating General	99311
Oak Park Hospital [1-3].......................... 525 Wisconsin Ave., Oak Park	Church	212	9,033	Req	18	12	No	200FM	12 Rotating General	17211
West Suburban Hospital +[1-3].................... 518 N. Austin Blvd., Oak Park	NPCorp	329	12,231	Req	16	12	No	200FM	15 Rotating General	17311
Methodist Hospital of Central Illinois+[3]...... 221 N. Glen Oak Ave., Peoria	Church	347	13,393	Req	49	12	No	125FM	16 Rotating General	17411
St. Francis Hospital +[1]........................ 530 N. Glen Oak Ave., Peoria	Church	644	20,355	Req	53	12	No	200FM	18 Rotating General	17511
Rockford Memorial Hospital +[1]................ 2400 N. Rockton Ave., Rockford	NPCorp	240	10,271	Req	72	12	No	150FM	5 Rotating General	17711
St. Anthony Hospital +[1-3]...................... 1401 E. State St., Rockford	Church	217	8,626	Req	42	12	No	150FM	6 Rotating General	17811
Swedish-American Hospital [1].................... 1316 Charles St., Rockford	NPCorp	200	9,257	Req	41	12	No	150FM	8 Rotating General	17911
INDIANA—Hospitals, 15; Internships, 180										
St. Catherine Hospital [1]........................ 4321 Fir St., East Chicago	Church	333	12,114	None	43	12	No	300FM	7 Rotating General	18111
St. Mary's Hospital [1]........................... 3700 Washington Ave., Evansville 15	Church	340	12,398	Req	43	12	No	250FM	4 Rotating General	94111
Luthern Hospital [1]............................. 3024 Fairfield Ave., Fort Wayne 6	Church	338	10,246	Req	41	12	No	250FM	6 Rotating General	18311
St. Joseph's Hospital +[1-3]..................... 730 W. Berry St., Fort Wayne 2	Church	260	9,038	Req	46	12	No	250PM	6 Rotating General	90411
Methodist Hospital +[1-3]........................ 1600 W. 6th Ave., Gary	Church	212	12,653	None	56	12	No	250FM	16 Rotating General	86011
St. Mary Mercy Hospital [1-3]................... 540 Tyler St., Gary	Church	287	13,122	Req	42	12	No	250FM	8 Rotating General	18411
St. Margaret Hospital .... 25 Douglas St., Hammond	Church	375	16,181	None	31	12	No	300FM	12 Rotating General	18511
Indiana University Medical Center +[1-4]-X31... 1100 W. Michigan St., Indianapolis 7	State	541	11,933	Req	69	12	145	200PM	18 Rotating General 4 Straight Medicine 6 Straight Surgery	18711 18732 18733
Marion County Hospital +[1-4]-X31............. 960 Locke St., Indianapolis 7	CyCo	611	12,318	Req	49	12	No	200PM	35 Rotating General	18611
Methodist Hospital +[1]........................... 1604 N. Capitol Ave., Indianapolis 7	Church	665	26,179	Req	43	12	No	215PM	19 Rotating General	18811
St. Vincent's Hospital +[1]....................... 120 W. Fall Creek Pky., Indianapolis 7	Church	294	11,789	Req	53	12	No	235PM	10 Rotating General	18911
St. Elizabeth Hospital +[1]...................... 1021 N. 14th St., Lafayette	Church	312	10,972	Req	34	12	No	275FM	4 Rotating General	19011
Ball Memorial Hospital +[1]...................... 2401 University Ave., Muncie	NPCorp	375	12,403	Req	44	12	No	250FM	8 Rotating General	19211
Memorial Hospital +[1]........................... 615 N. Michigan St., South Bend 1	NPCorp	256	10,242	Req	42	12	No	300PM	9 Rotating General	19311
St. Joseph's Hospital +[1]....................... 811 E. Madison St., South Bend 22	Church	183	7,741	Req	31	12	146	250PM	8 Rotating General	19411
IOWA—Hospitals, 8; Internships, 93										
Mercy Hospital [1-3].............................. 835 6th Ave., S.E., Cedar Rapids	Church	222	9,526	Req	55	12	No	250FM	10 Rotating General	19611
St. Luke's Methodist Hospital +[1-3]........... 1026 A Ave., N.E., Cedar Rapids	Church	316	13,619	Req	53	12	No	250FM	13 Rotating General	19711
Mercy Hospital [1]-x49............................. 420 E. Washington Ave., Council Bluffs	Church	175	6,717	Req	27	12	No	300FM	4 Rotating General	19811
Broadlawns, Polk County Hospital +[1]........ 18th and Hickman Rd., Des Moines 14	County	232	4,869	Req	44	12	No	200FM	12 Rotating General	19911
Iowa Lutheran Hospital [1-3]..................... 716 Parnell Ave., Des Moines 16	Church	205	8,714	Req	36	12	147	200FM	10 Rotating General	20011
Iowa Methodist Hospital +[1-3].................. 1200 Pleasant St., Des Moines 14	Church	400	16,677	Req	54	12	No	200FM	10 Rotating General	20111
Mercy Hospital +[1-3]............................. 5th and Ascension Sts., Des Moines 14	Church	200	10,822	Req	69	12	148	225FM	14 Rotating General	20211
State University of Iowa Hospitals +[1-4]-X32.. Newton Rd., Iowa City	State	907	22,570	Req	69	12	No	155FM	20 Rotating General	20311
KANSAS—Hospitals, 6; Internships, 100										
Bethany Hospital [1-3].............................. 51 N. 12th St., Kansas City 7	Church	260	7,381	None	42	12	No	300PM	10 Rotating General	20511
St. Margaret's Hospital +...................... 8th and Vermont Ave., Kansas City 8	Church	215	8,022	None	46	12	No	300PM	8 Rotating General	20711

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KANSAS—Continued										
University of Kansas Medical Center +$^{1-3}$-X35.. 39th and Rainbow Blvd., Kansas City 3	State	535	15,634	None	75	12	149	100PM	12 Rotating General 1 Straight Medicine 1 Straight Surgery 3 Straight Pediatrics 1 Straight Pathology 1 Mixed (Path.-Med.) 5 Mixed (Med.-Surg.-Ped.) 1 Mixed (Path.-Surg.)	20811 20832 20833 20834 20836 20837 20853 20856
St. Francis Hospital +$^{1-3}$...................... 928 N. Emporia Ave., Wichita 5	Church	700	23,089	Req	47	12	242	250FM	30 Rotating General	20911
Wesley Hospital +$^{1-3}$.......................... 550 N. Hillside Ave., Wichita 6	Church	450	21,003	None	44	12	150	270FM	18 Rotating General	21011
Wichita-St. Joseph Hospital +$^{1-3}$.............. 3400 E. Grand Ave., Wichita 17	Church	385	14,291	Req	30	12	155	250FM	9 Rotating General	21111
KENTUCKY—Hospitals, 9; Internships, 120										
St. Elizabeth Hospital +$^{1-3}$.................... 21st and Eastern Ave., Covington	*Church*	*360*	*12,588*	*Req*	*31*	*12*	*No*	*200FM*	*14 Rotating General*	21211
Good Samaritan Hospital +$^{1-3}$................ 310 S. Limestone St., Lexington	Church	270	10,220	Req	31	12	No	150FM	5 Rotating General	21411
St. Joseph Hospital +$^{1-3}$....................... 544 W. 2nd St., Lexington	Church	244	9,688	Req	40	12	No	200FM	8 Rotating General	21511
Kentucky Baptist Hospital ^{3}..................... 810 Barret Ave., Louisville 4	Church	345	15,503	Req	25	12	243	225PM	12 Rotating General	21611
Louisville General Hospital +$^{1-3-4}$-X34......... 323 E. Chestnut St., Louisville 2	CyCo	365	10,728	Req	58	12	151	70FM	22 Rotating General 8 Straight Medicine 2 Straight Surgery 10 Straight Pediatrics 1 Straight Pathology	21711 21732 21733 21734 21736
Norton Memorial Infirmary +$^{1-3}$............... 231 W. Oak St., Louisville 3	*NPCorp*	298	*12,674*	*Req*	33	12	243	200FM	*6 Rotating General*	21811
St. Anthony Hospital $^{1-3}$...................... 1313 St. Anthony Pl., Louisville 4	Church	235	11,617	Req	28	12	152	200FM	5 Rotating General	21911
St. Joseph Infirmary +^{1}......................... 735 Eastern Pky., Louisville 17	Church	440	19,945	Req	44	12	No	200FM	18 Rotating General	22011
SS. Mary and Elizabeth Hospital +$^{1-3}$......... 4400 Churchman Ave., Louisville 15	Church	192	10,267	Req	39	12	153	200FM	9 Rotating General	22111
LOUISIANA—Hospitals, 10; Internships, 251										
Charity Hospital of Louisiana +$^{1-4}$-X35-36.... 1532 Tulane Ave., New Orleans 12	State	*2,802*	*58,690*	Req	*76*	12	No	75FM	*126 Rotating General*	22411
Hotel Dieu +$^{1-3}$............................. 2004 Tulane Ave., New Orleans 16	Church	295	13,606	Req	26	12	No	150FM	12 Rotating General	22511
Mercy Hospital ^{3}.............................. 301 N. Jefferson Davis Pkwy., New Orleans 19	Church	193	10,896	Req	51	12	No	175FM	9 Rotating General	22611
Ochsner Foundation Hospital +^{1}-x36........... 1516 Jefferson Hwy., New Orleans 21	NPCorp	248	8,504	Req	73	12	No	125FM	4 Straight Medicine 4 Straight Surgery	96632 96633
Southern Baptist Hospital +$^{1-3}$............... 2700 Napoleon Ave., New Orleans 15	Church	437	20,284	Req	41	12	154	175PM	20 Rotating General	22811
Touro Infirmary +$^{1-3}$x36......................... 3516 Prytania St., New Orleans 15	NPCorp	457	19,634	Req	78	12	No	100FM	25 Rotating General	22911
Confederate Memorial Medical Center +$^{1-4}$.... 1541 Kings Hwy., Shreveport	State	*962*	22,788	Req	*30*	12	*No*	*100FM*	*36 Rotating General*	23211
Highland Hospital .... 1006 Highland Ave., Shreveport 50	Corp	152	6,026	None	30	12	No	250FM	4 Rotating General	82211
North Louisiana Sanitarium ^{1}................ 1130 Louisiana Ave., Shreveport 7	Corp	120	4,788	Req	48	12	156	250FM	4 Rotating General	23011
T. E. Schumpert Memorial Sanitarium $^{1-3}$.... 911 Margaret Pl., Shreveport 15	Church	325	12,855	Req	35	12	No	250FM	7 Rotating General	23111
MAINE—Hospitals, 3; Internships, 22										
Eastern Maine General Hospital +^{1}........... 489 State St., Bangor	*NPCorp*	297	*10,028*	Req	48	12	No	*100FM*	*6 Rotating General*	23311
Central Maine General Hospital +$^{1-3}$.......... 300 Main St., Lewiston	NPCorp	220	7,184	Req	51	12	No	190FM	4 Rotating General	23411
Maine Medical Center +$^{1-5}$..................... 22 Bramhall St., Portland 4	NPCorp	385	13,161	Req	37	12	No	100FM	12 Rotating General	23611
MARYLAND—Hospitals, 19; Internships, 318										
Baltimore City Hospitals +$^{1-3-4}$-X38-x37...... 4940 Eastern Ave., Baltimore 24	City	1,140	12,140	Req	73	12	157	50FM	12 Rotating General 10 Straight Medicine 6 Straight Surgery 3 Straight Pediatrics 1 Straight Pathology 2 Mixed (Med.-Ped.) 2 Mixed (Ped.-Med.)	23711 23732 23733 23734 23736 23753 23754
Bon Secours Hospital +^{3}....................... 2025 W. Fayette St., Baltimore 23	Church	250	7,277	Req	33	12	No	225FM	10 Rotating General	23811
Church Home and Hospital +$^{1-3}$.............. *Broadway and Fairmount Aves.,* Baltimore 31	Church	180	6,094	Req	55	12	158	175FM	8 Rotating General 1 Straight Medicine	23911 23932
Franklin Square Hospital +$^{1-3}$................ 110 N. Calhoun St., Baltimore 23	NPCorp	174	6,289	Req	*64*	12	159	*200FM*	9 *Rotating General*	24011
Hospital for Women +$^{1-3}$..................... *Lafayette Ave. and John St., Baltimore 17*	NPCorp	154	7,657	Req	49	12	No	200FM	6 Mixed (Med.-Surg.-Ob.-Gyn.)	24123
Johns Hopkins Hospital +$^{1-3-4}$-X37.......... 601 N. Broadway, Baltimore 5	NPCorp	996	25,968	Req	68	12	160	160PM	10 Straight Medicine 17 Straight Surgery 12 Straight Pediatrics 4 Straight Pathology 10 Straight Ob.-Gyn. 11 Straight Medicine (Private Wards)	24232 24233 24234 24236 24235 24238
Lutheran Hospital +$^{1-3-4}$...................... 730 Ashburton St., Baltimore 16	Church	191	8,167	Req	43	12	158	200FM	10 Rotating General	24311

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MARYLAND—Continued										
Maryland General Hospital +$^{1-3}$-x38 827 Linden Ave., Baltimore 1	Church	387	10,198	Req	45	12	158	200FM	11 Rotating General	21411
Mercy Hospital +$^{1-3-4}$-x38 Calvert and Saratoga Sts., Baltimore 2	Church	300	11,084	Req	43	12	No	225PM	16 Rotating General	21511
Provident Hospital and Free Dispensary +$^{1-3-4}$ 1514 Division St., Baltimore 17	NPCorp	137	5,154	Req	37	12	No	200FM	9 Rotating General	21611
St. Agnes Hospital +$^{1-3}$ 1000 Caton Ave., Baltimore 29	Church	217	8,844	Req	45	12	158	250PM	9 Rotating General	21711
St. Joseph's Hospital +^{3} 1400 N. Caroline St., Baltimore 13	Church	240	8,012	Req	46	12	158	200FM	8 Rotating General	21811
Sinai Hospital +$^{1-3-4}$ 1714 E. Monument St., Baltimore 5	NPCorp	308	13,153	Req	47	12	No	100FM	2 Rotating General 5 Rot. (Med. Major) 4 Rot. (Surg. Major) 1 Rot. (Ped. Major) 4 Straight Medicine 2 Straight Surgery 1 Straight Pediatrics	24911 24912 24913 24914 24932 24933 24934
South Baltimore General Hospital +$^{1-3}$ 1213 Light St., Baltimore 30	NPCorp	181	6,145	Req	42	12	No	175FM	8 Rotating General	25011
Union Memorial Hospital +$^{1-3}$ 33rd. and Calvert Sts., Baltimore 18	NPCorp	361	10,872	Req	44	12	No	200FM	16 Rotating General 5 Straight Surgery	25111 25133
University Hospital +$^{1-3-4}$-X38 Redwood and Greene Sts., Baltimore 1	State	591	15,148	Req	51	12	No	175PM	17 Rotating General 8 Straight Medicine 2 *Straight Surgery* 3 Straight Pediatrics	25211 25232 25233 25234
Suburban Hospital +$^{1-3}$ 8600 Old Georgetown Rd., Bethesda	NPCorp	200	8,638	Req	57	12	130	100-150FM	12 Rotating General	25311
Prince George's General Hospital +$^{1-3}$ Cheverly	County	235	11,863	Req	53	12	No	150FM	11 Rotating General	90711
Washington County Hospital +$^{1-3}$ King and Antietam Sts., Hagerstown	NPCorp	293	11,285	Req	31	12	...	200FM	8 Rotating General	91511
MASSACHUSETTS—Hospitals, 36; Internships, 423										
Beverly Hospital +$^{1-3}$ Cor. Herrick and Heather Sts., Beverly	NPCorp	259	6,828	Req	61	12	No	200FM	8 Rotating General	25511
Beth Israel Hospital +$^{1-4}$-X40-41 330 Brookline Ave., Boston 15	NPCorp	342	11,993	Req	60	12	162	150	11 Straight Medicine 6 Straight Surgery	25632 25633
Boston City Hospital +$^{1-3-4}$-X39-40-41 818 Harrison Ave., Boston 18	City	1,570	30,179	Req	58	12	164	112FM		
	I and III	Medical Tufts							16 Straight Medicine	25793
	II and IV	Medical Harvard							16 Straight Medicine	25794
	V and VI	Medical Boston Univ.							16 Straight Medicine	25795
	I	Surgical Tufts							8 Straight Surgery	25796
	III	Surgical Boston Univ.							8 Straight Surgery	25798
	V	Surgical Harvard							6 Straight Surgery	25703
		Straight Specialties, Boston Univ.							6 Straight Pediatrics	25704
		Pathology							5 Straight Pathology	25736
Boston Floating Hospital +$^{1-3}$-X41 20 Ash St., Boston 11	NPCorp	75	3,189	Req	82	12	163	212FM	5 Straight Pediatrics	98734
Carney Hospital +3 2100 Dorchester Ave., Boston 24	Church	318	11,226	Req	46	12	165	150FM	12 Rotating General	25811
Children's Medical Center +$^{1-3-4}$-X40 300 Longwood Ave., Boston 15	NPCorp	428	9,094	Req	84	12	No	FM	5 Straight Pediatrics 2 Straight Pathology	25934 25936
Massachusetts General Hospital +$^{2-3-4}$-X40 Fruit St., Boston 14	NPCorp	916	24,239	Req	75	12	No	25-54FM	12 Straight Medicine 10 Straight Surgery 6 Straight Pediatrics 1 Straight Pathology	26132 26133 26134 26136
Massachusetts Memorial Hospitals +$^{1-3}$-X39 750 Harrison Ave., Boston 18	NPCorp	313	6,449	Req	54	12	166	150FM	8 Straight Medicine 6 Straight Surgery 1 Straight Pathology	26232 26233 26236
New England Center Hospital +$^{1-3}$-X41 171 Harrison Ave., Boston 11	NPCorp	208	5,930	Req	64	12	167	83FM	12 Straight Medicine 6 Straight Surgery	26332 26333
New England Hospital +$^{1-3}$ Dimock and Columbus Sts., Boston 19	NPCorp	150	4,066	Req	44	12	168	75FM	6 Rotating General	26411
Peter Bent Brigham Hospital +$^{1-3-4}$-X40 721 Huntington Ave., Boston 15	NPCorp	286	6,629	Req	78	12	169	25FM	13 Straight Medicine 6 Straight Surgery	26532 26533
St. Elizabeth's Hospital +$^{1-3}$-X41 736 Cambridge St., Boston 35	Church	400	14,180	Req	41	12	No	110FM	14 Rotating General	26611
Brockton Hospital +$^{1-3}$ 680 Centre St., Brockton 11	NPCorp	231	8,843	Req	31	12	No	250FM	4 Rotating General	26711
Cambridge City Hospital +$^{1-3}$-x41 1493 Cambridge St., Cambridge 39	City	246	6,306	Req	43	12	No	140FM	12 Rotating General	26811
Mount Auburn Hospital +$^{1-3}$-x40 330 Mt. Auburn St., Cambridge 38	NPCorp	218	8,235	Req	56	12	168	100FM	4 Mixed (Med.-Surg.-Ped.)	26923
Truesdale Hospital +$^{1-3}$ 1820 Highland Ave., Fall River	NPCorp	152	4,752	Req	31	12	171	100FM	9 Rotating General	27011
Union Hospital $^{1-3}$ 300 Hanover St., Fall River	NPCorp	183	5,243	Req	43	12	No	100-150FM	10 *Rotating General*	86411
Framingham Union Hospital 25 Evergreen St., Framingham	NPCorp	160	7,847	Req	51	12	No	200FM	6 Rotating General	81211
Holyoke Hospital +$^{1-3-4}$ 575 Beech St., Holyoke	NPCorp	197	7,277	Req	40	12	No	100FM	2 Rotating General 2 Mixed (Med.-Surg.)	27311 27324
Providence Hospital 679 Dwight St., Holyoke	Church	222	4,468	Req	29	12	No	200FM	6 *Rotating General*	81311
Lawrence General Hospital +$^{1-3}$ 1 Garden St., Lawrence	NPCorp	203	7,474	Req	59	12	No	100FM	6 Rotating General	27411
Lowell General Hospital +$^{1-3}$ 295 Varnum Ave., Lowell	NPCorp	215	7,202	Req	39	12	No	100-150FM	4 Rotating General	27511
St. John's Hospital ^{3} 14 Bartlett St., Lowell	Church	183	7,613	Req	48	12	No	150FM	4 Rotating General	27611
St. Joseph's Hospital ^{3} 830 Merrimack St., Lowell	Church	190	7,670	Req	33	12	No	125FM	4 Rotating General	27711
Lynn Hospital +$^{1-3}$ 212 Boston St., Lynn	NPCorp	280	9,672	Req	35	12	No	100FM	10 Rotating General	27811

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MASSACHUSETTS—Continued										
St. Luke's Hospital +$^{1-3}$ 101 Page St., New Bedford	NPCorp	360	11,300	Req	31	12	No	150FM	10 Rotating General	27911
Newton-Wellesley Hospital +$^{1-3}$ 2014 Washington St., Newton Lower Falls 62	NPCorp	285	7,797	Req	43	12	No	165FM	8 Rotating General	28011
St. Luke's Hospital $^{1-3}$ 379 East St., Pittsfield	Church	148	4,969	Req	34	12	No	150FM	3 Rotating General	28211
Quincy City Hospital +$^{1-3-4}$ 114 Whitwell St., Quincy 69	City	251	10,116	Req	41	12	No	151FM	12 Rotating General	28311
Salem Hospital +$^{1-3}$ 81 Highland Ave., Salem	NPCorp	243	8,357	Req	35	12	172	150-190FM	6 Rotating General	28411
Mercy Hospital $^{1-3}$ 233 Carew St., Springfield 4	Church	340	12,241	Req	27	12	No	200FM	6 Rotating General	28511
Springfield Hospital +$^{1-3}$ 759 Chestnut St., Springfield 7	NPCorp	373	11,642	Req	54	12	173	125FM	12 Rotating General	28611
Waltham Hospital ^{1}-x41 Hope Ave., Waltham 54	NPCorp	146	5,669	Req	33	12	No	200FM	4 Rotating General	28811
Memorial Hospital +$^{1-3}$ 119 Belmont St., Worcester 5	NPCorp	288	10,206	Req	63	12	No	150FM	10 Rotating General	28911
St. Vincent Hospital +$^{1-3}$ 25 Winthrop St., Worcester 10	Church	555	15,944	Req	53	12	No	150-200FM	18 Rotating General	29011
Worcester City Hospital +$^{1-3-4}$ 71 Jaques Ave., Worcester 9	City	410	11,124	Req	45	12	No	200FM	18 Rotating General	29111
MICHIGAN—Hospitals, 40; Internships, 639										
St. Joseph Mercy Hospital +$^{1-3}$-x42 326 N. Ingalls St., Ann Arbor	Church	385	14,904	Req	62	12	No	285FM	16 Rotating General	29211
University Hospital +$^{1-3-4}$-X42 1405 E. Ann St., Ann Arbor	State	1,004	19,366	Req	78	12	174	130	8 Rot. (Med. Major) 14 Rot. (Surg. Major) 3 Rot. (Ped. Major) 3 Rot. (Ob.-Gyn. Maj.) 2 Rot. (Neuro. Major) 2 Rot. (Derm. Major) 3 Rot. (Anes. Major) 2 Rot. (Path. Major) 1 Rot. (Otol. Major) 1 Rot. (Ophth. Maj.) 12 Rot. (Gen. Practice Major) 2 Rot. (Phys. Med. and Rehab. Major)	29312 29313 29314 29315 29374 29375 29377 29386 29378 29379 29359 29389
Community Hospital 200 Tompkins St., Battle Creek	NPCorp	157	9,440	...	35	12	...	250FM	6 Rotating General	81411
Leila Y. Post Montgomery Hospital +$^{1-3}$ 9 Emmett St., Battle Creek	Church	187	7,709	Req	33	12	No	275FM	5 Rotating General	29411
Mercy Hospital ^{1} 960 Agard St., Benton Harbor	NPCorp	154	5,880	Req	44	12	No	275PM	6 Rotating General	90011
Oakwood Hospital +$^{1-3}$ 18101 Oakwood Blvd., Dearborn 8	NPCorp	234	11,694	Req	50	12	175	200-250FM	13 Rotating General	94611
Detroit Memorial Hospital +$^{1-3}$-x43 1420 St. Antoine St., Deroit 26	NPCorp	322	10,175	Req	49	12	176	400	12 Rotating General	29611
Evangelical Deaconess Hospital +$^{1-3}$ 3245 E Jefferson Ave., Detroit 7	Church	200	7,393	Req	53	12	No	250PM	8 Rotating General	29711
Grace Hospital +$^{1-3}$-x43 4160 John R. St., Detroit 1	NPCorp	744	28,265	Req	45	12	177	250FM	24 Rotating General	29811
Harper Hospital +$^{1-3}$-x43 3825 Brush St., Detroit 1	NPCorp	663	22,116	Req	49	12	177	250PM	28 Rotating General	29911
Henry Ford Hospital +$^{1-3}$ 2799 W. Grand Blvd., Detroit 2	NPCorp	860	25,481	None	75	12	No	250FM	26 Rotating General	30011
Mount Carmel Mercy Hospital +$^{1-3-4}$ 6071 W. Outer Dr., Detroit 35	Church	572	24,841	Req	53	12	178	285FM	24 Rotating General	30211
Providence Hospital +$^{1-3}$ 2500 W. Grand Blvd., Detroit 8	Church	396	14,261	Req	54	12	179	250PM	12 Rotating General	30311
Receiving Hospital +^{1}-X43 1326 St. Antoine St., Detroit 26	City	700	23,159	Req	57	12	180	303PM	51 Rotating General 8 Rot. (Surg. Major)	29511 29513
St. John Hospital +^{1} 22101 Moross Rd., Detroit 36	NPCorp	292	14,026	Req	50	12	181	300FM	14 Rotating General	91511
St. Joseph Mercy Hospital +$^{1-3}$ 2200 E. Grand Blvd., Detroit 11	Church	215	8,473	Req	42	12	181	400FM	6 Rotating General	30411
Sinai Hospital +$^{1-3-4}$ 6767 W. Outer Dr., Detroit 35	NPCorp	230	10,535	None	54	12	177	250PM	15 Rotating General	92611
Woman's Hospital +^{1} [illegible] E. Hancock Ave., Detroit 1	NPCorp	355	12,566	Req	63	12	177	450	16 Rotating General	30511
Wa[illegible] Eloise	County	4,701	9,745	Req	38	12	180	300FM	36 Rotating General	30611
Hurley Hospital +$^{1-3}$ 6th Ave and Begole St., Flint 2	City	647	24,044	Req	53	12	No	250PM	36 Rotating General	30711
McLaren General Hospital +^{1} 401 Ballenger Hwy., Flint 2	NPCorp	284	12,657	Req	50	12	No	300PM	12 Rotating General	87611
St. Joseph Hospital +$^{1-3}$ [illegible]	Church	400	16,012	Req	57	12	182	300PM	18 Rotating General	30811
[illegible] ^{3} [illegible] Rapids 6	NPCorp	328	13,465	Req	68	12	183	275FM	16 Rotating General	30911
[illegible] [illegible] apids 3	NPCorp	416	16,879	Req	63	12	No	250FM	16 Rotating General	31011
St. Mary's Hospital +^{1} 201 Lafayette Ave. S.E., Grand Rapids 3	Church	320	13,272	Req	39	12	184	275FM	16 Rotating General	31111
Bon Secours Hospital +^{3} 468 Cadieux Rd., Grosse Pointe 30	Church	160	7,646	Req	48	12	185	315FM	7 Rotating General	90611
[illegible] Hospital +$^{1-3}$ [illegible] hland Park 3	City	336	11,633	Req	44	12	181	275FM	14 Rotating General	31211
[illegible] 1521 Gull Rd., Kalamazoo 62	NPCorp	285	9,809	None	46	12	No	250FM	8 Rotating General	31311

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MICHIGAN—Continued										
Bronson Methodist Hospital *[1] 252 E. Lovell St., Kalamazoo 8	Church	238	10,266	Req	55	12	No	280PM	8 Rotating General	31411
Edward W. Sparrow Hospital *[1-3] 1215 E. Michigan Ave., Lansing 12	NPCorp	305	14,578	Req	51	12	No	200PM	10 Rotating General	31511
St. Lawrence Hospital *[1-3] 1210 W. Saginaw St., Lansing 15	Church	275	13,254	None	67	12	No	250FM	12 Rotating General	31611
Midland Hospital [1] 4005 Orchard Dr. Midland	NPCorp	160	8,015	Req	77	12	No	250FM	6 Rotating General	96111
Hackley Hospital 1700 Clinton St., Muskegon	NPCorp	235	8,981	Req	43	12	...	300FM	10 Rotating General	81511
Pontiac General Hospital *[1-3] 461 W. Huron St., Pontiac 18	City	257	12,071	Req	44	12	No	325FM	19 Rotating General	31811
St. Joseph Mercy Hospital *[1-3] 900 Woodward Ave., Pontiac 19	Church	310	16,635	Req	60	12	No	300FM	12 Rotating General	31911
William Beaumont Hospital *[1-3] 3601 W. 13 Mile Rd., Royal Oak	NPCorp	259	13,102	Req	53	12	No	275PM	12 Rotating General	97811
Saginaw General Hospital *[1-3] 1447 N. Harrison St., Saginaw	NPCorp	216	9,488	Req	61	12	No	325	6 Rotating General	32011
St. Luke's Hospital [1-3] 705 Cooper St., Saginaw 19	Church	211	9,404	Req	56	12	No	400PM	8 Rotating General	32111
St. Mary's Hospital *[1-3] 830 S. Jefferson Ave., Saginaw 16	Church	172	8,969	Req	49	12	No	350PM	6 Rotating General	32211
James Decker Munson Hospital [1] 6th and Madison Sts., Traverse City	NPCorp	217	8,305	Req	51	12	No	275PM	8 Rotating General	32311
MINNESOTA—Hospitals, 14; Internships, 255										
St. Luke's Hospital *[1-3] 915 E. 1st St., Duluth 11	NPCorp	376	14,159	Req	68	12	186	125FM	18 Rotating General	32411
St. Mary's Hospital *[1] 407 E. 3rd St., Duluth 11	Church	350	11,882	Req	72	12	186	131FM	12 Rotating General	32511
Methodist Hospital *[1-3] 6500 Excelsior Blvd., St. Louis Park Minneapolis 26	Church	168	7,243	Req	61	12	No	200FM	12 Rotating General	86711
Minneapolis General Hospital *[1-3]-X44 619 S. 5th St., Minneapolis 15	City	441	8,094	Req	60	12	No	75FM	39 Rotating General	32911
Mount Sinai Hospital *[1-3] 737 E. 22nd St., Minneapolis 4	NPCorp	224	9,713	Req	64	12	No	150FM	14 Rotating General	86811
Northwestern Hospital *[1-3] 810 E. 27th St., Minneapolis 7	NPCorp	273	11,592	Req	68	12	No	175FM	12 Rotating General 1 Straight Medicine 1 Straight Surgery 1 Straight Pediatrics	33011 33032 33033 33034
St. Mary's Hospital *[1-3] 2500 S. 6th St., Minneapolis 6	Church	316	16,272	Req	59	12	No	200FM	10 Rotating General	33211
Swedish Hospital *[1-3] 914 S. 8th St., Minneapolis 4	NPCorp	420	18,474	None	48	12	No	150FM	28 Rotating General	33311
University of Minnesota Hospitals *[1-3]-X44 412 Union St. SE, Minneapolis 14	State	649	14,957	Req	86	12	187	75FM	12 Straight Medicine 14 Straight Surgery 13 Straight Pediatrics 3 Straight Ob.-Gyn.	33432 33433 33434 33435
Ancker Hospital *[1]-X44 495 Jefferson Ave., St. Paul 1	CyCo	850	7,784	Req	60	12	No	75FM	26 Rotating General	33511
Bethesda Hospital [1-3] 559 Capitol Blvd., St. Paul 1	Church	178	9,637	Req	45	12	188	200FM	8 Rotating General	33611
Charles T. Miller Hospital *[1-3] 125 W. College Ave., St. Paul 2	NPCorp	391	12,973	Req	60	12	189	200FM	13 Rotating General	33711
St. Joseph's Hospital *[1-3] 69 W. Exchange St., St. Paul 2	Church	281	11,571	Req	55	12	No	215FM	14 Rotating General	33811
St. Luke's Hospital *[1-3] 287 N. Smith Ave., St. Paul 2	NPCorp	215	7,787	Req	41	12	190	150FM	4 Rotating General	33911
MISSISSIPPI—Hospitals, 2; Internships, 35										
Mississippi Baptist Hospital *[1-3] 1190 N. State St., Jackson 28	Church	315	15,450	Req	53	12	No	250PM	12 Rotating General	34011
University Hospital *[1]-X45 2500 N. State St., Jackson 6	State	355	9,582	Req	60	12	No	200	23 Rotating General	95711
MISSOURI—Hospitals, 25; Internships, 448										
St. Louis County Hospital *[1-3] 601 S. Brentwood Blvd., Clayton 5	County	190	5,072	Req	58	12	No	150FM	10 Rotating General	34211
University of Missouri Medical Center *[1-3]-X46 807 Stadium Rd, Columbia	State	242	3,679	None	73	12	No	150	4 Straight Pathology 2 Straight Pediatrics	99436 99434
Children's Mercy Hospital *[1-4]-X33 1710 Independence Ave., Kansas City 6	NPCorp	135	2,556	Req	71	12	282	175PM	3 Straight Pediatrics	98834
Kansas City General Hospital *-X33 24th and Cherry St., Kansas City 8	City	600	13,222	Req	46	12	No	150FM	36 Rotating General	34311
Menorah Medical Center *[1-3]-X33 4944 Rockhill Rd., Kansas City 10	NPCorp	319	11,570	Req	47	12	190	250FM	16 Rotating General	34511
Research Hospital *[1-3] 2300 Holmes St., Kansas City 8	NPCorp	258	8,089	Req	54	12	190	250FM	10 Rotating General	34611
St. Joseph Hospital *[1-3] 2510 E. Linwood Blvd., Kansas City 28	Church	318	13,569	Req	58	12	No	200FM	20 Rotating General	34711
St. Luke's Hospital *[1-3] 4400 J. C. Nichols Pkwy., Kansas City 11	Church	437	15,345	Req	63	12	190	225FM	18 Rotating General	34811
St. Mary's Hospital *[1-3] 101 Memorial Drive, Kansas City 8	Church	350	13,248	Req	56	12	190	300PM	16 Rotating General	34911
Trinity Lutheran Hospital [1-3] 3001 Wyandotte St., Kansas City 8	Church	203	7,858	Req	44	12	190	200FM	8 Rotating General	35011
Missouri Methodist Hospital *[1-3] 8th and Faraon Sts., St. Joseph	Church	300	8,954	Req	35	12	No	175FM	4 Rotating General	35111
St. Joseph's Hospital [1-3] 923 Powell St., St. Joseph	Church	150	6,739	Req	31	12	191	200FM	4 Rotating General	35211
Barnes Hospital *[1-3]-X48 600 S. Kingshighway Blvd., St. Louis 10	NPCorp	937	27,777	Req	72	12	192	35FM	24 Straight Medicine 14 Straight Surgery 5 Straight Pathology	35332 35333 35336

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MISSOURI—Continued										
De Paul Hospital +$^{1-3}$ 2415 N. Kingshighway Blvd., St. Louis 13	Church	350	13,697	Req	40	12	No	150FM	12 Rotating General	35511
Evangelical Deaconess Hospital $^{1-3}$ 6150 Oakland Ave., St. Louis 10	Church	328	9,025	Req	42	12	192	150FM	12 Rotating General	35611
Homer G. Phillips Hospital +$^{1-3-4}$-x48 2601 N. Whittier St., St. Louis 13	City	654	15,141	...	58	12	No	193PM	40 Rotating General	35711
Jewish Hospital +$^{1-3-4}$ 216 S. Kingshighway Blvd., St. Louis 10	NPCorp	485	11,608	Req	52	12	No	175FM	14 Rotating General 4 Mixed (Med.-Surg.)	35811 35821
Lutheran Hospital +$^{1-3}$ 2639 Miami St., St. Louis 18	Church	333	9,109	Req	35	12	No	150FM	12 Mixed (Med.-Surg.-Ob.-Gyn.)	35922
Missouri Baptist Hospital +$^{1-3}$ 919 N. Taylor Ave., St. Louis 8	Church	486	11,566	Req	36	12	No	125FM	12 Rotating General 2 Rot. (Med. Major) 2 Rot. (Surg. Major)	36011 36012 36013
St. Anthony's Hospital +$^{1-4}$-x47 3520 Chippewa St., St. Louis 18	NPCorp	250	9,595	None	32	12	No	150FM	4 Rotating General	36111
St. John's Hospital +$^{1-3}$-X47 307 S. Euclid Ave., St. Louis 10	Church	358	11,690	Req	19	12	192	150FM	14 Rotating General	36211
St. Louis Children's Hospital +^{1}-X48 500 S. Kingshighway Blvd., St. Louis 10	NPCorp	165	4,888	Req	83	12	193	50FM	8 Straight Pediatrics	81034
St. Louis City Hospital +$^{1-3}$-X47-48 1515 Lafayette Ave., St. Louis 4	City	1,022	16,389	Req	57	12	No	192PM	46 Rotating General 16 Straight Medicine 6 Straight Surgery 4 Straight Pediatrics	36311 36332 36333 36334
St. Luke's Hospital +^{1} 5535 Delmar Blvd., St. Louis 12	Church	305	10,026	Req	55	12	194	200FM	12 Rotating General	36411
*St. Mary's Group of Hospitals +^{1}-X47 1402 S. Grand Blvd., St. Louis 4	Church	335	12,815	Req	58	12	192	85FM	12 Rotating General 8 Straight Medicine 8 Straight Surgery 6 Straight Pediatrics	....
MONTANA—Hospitals, 2; Internships, 8										
St. James Hospital ^{3} Silver and Idaho Sts., Butte	Church	160	6,257	Req	41	12	No	150FM	4 Rotating General	36611
Montana Deaconess Hospital +$^{1-3}$ 1109 Sixth Ave., N., Great Falls	Church	198	8,095	None	79	12	No	150PM	4 Rotating General	36711
NEBRASKA—Hospitals, 10; Internships, 89										
Bryan Memorial Hospital $^{1-3}$-x50 4848 Sumner St., Lincoln 6	Church	128	5,515	None	61	12	No	300FM	4 Rotating General	36811
Lincoln General Hospital +$^{1-3}$-x50 2315 S. 17th St., Lincoln 2	NPCorp	173	6,301	Req	55	12	No	300FM	4 Rotating General	36911
St. Elizabeth Hospital +^{1}-x49 1145 South St., Lincoln 2	Church	260	10,438	None	31	12	No	300FM	6 Rotating General	37011
Bishop Clarkson Memorial Hospital +$^{1-3}$-x50 Dewey Ave. at 44th St., Omaha 5	Church	254	11,488	Req	56	12	No	150PM	12 Rotating General	37111
Children's Memorial Hospital +$^{1-3}$x49 Dewey Ave. at 44th St., Omaha 5	NPCorp	100	4,113	Req	88	12	285	225-275	4 Straight Pediatrics	61034
Creighton Memorial St. Joseph's Hospital +$^{1-3}$-X49 2305 S. 10th St., Omaha 8	Church	616	16,837	Req	40	12	196	185FM	18 Rotating General	37211
Immanuel Hospital +$^{1-3}$-x50 36th and Meredith, Omaha 11	Church	181	5,820	Req	51	12	197	325	10 Rotating General	37311
Nebraska Methodist Hospital +$^{1-3}$-x50 3612 Cuming St., Omaha 31	Church	268	9,587	Req	59	12	197	300	11 Rotating General	37411
St. Catherine's Hospital $^{1-3}$-x49 Forest Ave. and 9th St., Omaha 8	Church	200	9,144	Req	42	12	196	300PM	6 Rotating General	37511
University of Nebraska Hospital +^{1}-X50 42nd St. and Dewey Ave., Omaha 5	State	163	3,422	Req	72	12	196	175PM	14 Rotating General	37611
NEW HAMPSHIRE—Hospitals, 1; Internships, 16										
Mary Hitchcock Memorial Hospital +$^{1-3}$ 2 Maynard St., Hanover	NPCorp	267	8,064	Req	87	12	No	125PM	16 Rotating General	37711
NEW JERSEY—Hospitals, 42; Internships, 499										
Atlantic City Hospital +$^{1-3}$ 26 S. Ohio Ave., Atlantic City	NPCorp	248	8,917	Req	50	12	No	150FM	12 Rotating General	37811
Bayonne Hospital and Dispensary +$^{1-3}$ 12 E. 30th St., Bayonne	NPCorp	191	7,267	Req	28	12	No	125FM	8 Rotating General	37911
Cooper Hospital +^{1}-X72-x74 6th and Stevens Sts., Camden 3	NPCorp	429	15,331	Req	50	12	No	200FM	12 Rotating General	38011
Our Lady of Lourdes Hospital +$^{1-3}$-x72 1600 Haddon Ave., Camden 3	Church	295	10,471	Req	50	12	No	200FM	10 Rotating General	90311
West Jersey Hospital +$^{1-3}$ Mt. Ephraim and Atlantic Aves., Camden 4	NPCorp	293	10,395	Req	38	12	No	200FM	12 Rotating General	38111
East Orange General Hospital ^{3} Central and S. Munn Aves., East Orange	NPCorp	169	6,064	Req	32	12	No	125FM	4 Rotating General	38211
*Alexian Brothers Hospital ^{3} 655 E. Jersey St., Elizabeth 1	Church	154	4,657	Req	44	12	198	100FM	12 Rotating General	.....
Elizabeth General Hospital and Dispensary $^{1-3}$ 925 E. Jersey St., Elizabeth 4	NPCorp	243	13,229	Req	36	12	No	150FM	12 Rotating General	38411
St. Elizabeth Hospital $^{1-3}$ 204 S. Broad St., Elizabeth 2	Church	202	8,149	Req	28	12	No	125FM	12 Rotating General	38511
Englewood Hospital +$^{1-3}$ 350 Engle St., Englewood	NPCorp	261	10,161	Req	40	12	No	150FM	8 Rotating General	38611
Hackensack Hospital +$^{1-3}$ 22 Hospital Pl., Hackensack	NPCorp	337	14,162	Req	42	12	No	125FM	12 Rotating General	38711
St. Mary's Hospital +$^{1-3}$ 4th St. and Willow Ave., Hoboken	Church	375	8,142	Req	39	12	No	100FM	20 Rotating General	38811
Christ Hospital +$^{1-3}$ 176 Palisade Ave., Jersey City 6	Church	332	9,344	Req	32	12	No	125FM	12 Rotating General	38911
Jersey City Hospital +$^{1-3-4}$-X52 50 Baldwin Ave., Jersey City 4	City	999	18,112	Req	33	12	199	83FM	34 Rotating General 15 Straight Medicine 8 Straight Surgery 2 Straight Pediatrics 1 Straight Pathology	39011 39032 39033 39034 39035

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NEW JERSEY—Continued										
St. Francis Hospital [1-3] 25 E. Hamilton Pl., Jersey City 2	Church	215	5,740	Req	27	12	199	100FM	10 Rotating General	39111
Monmouth Medical Center +[1-3-4] 3rd and Pavilion Aves., Long Branch	NPCorp	302	11,511	Req	41	12	No	150FM	12 Rotating General	39211
Mountainside Hospital +[1-3-4] Bay and Highland Aves., Montclair	NPCorp	326	10,352	Req	50	12	No	200FM	12 Rotating General	39311
All Souls Hospital 95 Mt. Kemble Ave., Morristown	Church	133	4,256	Req	51	12	...	125FM	3 Rotating General	90711
Morristown Memorial Hospital +[1-3] 100 Madison Ave., Morristown	NPCorp	236	9,921	Req	62	12	No	200FM	8 Rotating General	39411
Fitkin Memorial Hospital +[1-3] Corlies Ave., Neptune	NPCorp	260	10,477	Req	38	12	No	200FM	8 Rotating General	39511
Harrison S. Martland Medical Center +[1-3-4] 65 Bergen St., Newark 7	City	798	13,089	Req	29	12	No	114FM	30 Rotating General	39811
Newark Beth Israel Hospital +[1-3-4] 201 Lyons Ave., Newark 12	NPCorp	421	11,699	Req	36	12	No	75FM	13 Rotating General	39711
Presbyterian Hospital +[1-3] 27 S. 9th St., Newark 7	NPCorp	311	10,632	Req	34	12	200	150FM	10 Rotating General	87211
St. Barnabas Medical Center +[1-3] 658 High St., Newark 2	NPCorp	234	7,470	Req	36	12	No	100FM	8 Rotating General	39611
St. Michael's Hospital +[1-3] 306 High St., Newark 2	Church	407	13,059	Req	46	12	No	140FM	15 Rotating General	39911
Middlesex General Hospital +[1-3] 180 Somerset St., New Brunswick	NPCorp	226	7,694	Req	54	12	201	200FM	10 Rotating General	97911
St. Peter's General Hospital +[1-3] 260 Easton Ave., New Brunswick	Church	215	10,709	Req	54	12	No	135FM	10 Rotating General	40011
Orange Memorial Hospital +[1-3] 188 S. Essex Ave., Orange	NPCorp	339	10,919	Req	48	12	No	125FM	8 Rotating General	40111
Bergen Pines County Hospital +[1-3] East Ridgewood Ave., Paramus	County	701	4,129	Req	14	12	202	100FM	20 Rotating General	90611
Passaic General Hospital +[1-3] 350 Boulevard, Passaic	NPCorp	250	9,322	Req	40	12	No	100FM	6 Rotating General	40211
St. Mary's Hospital +[1-3-4] 211 Pennington Ave., Passaic	Church	242	7,086	Req	47	12	No	100FM	6 Rotating General	40311
Nathan and Miriam Barnert Memorial Hospital +[1-3] 680 Broadway, Paterson 4	NPCorp	147	6,431	Req	42	12	203	160PM	6 Rotating General	40411
Paterson General Hospital +[1-3] 528 Market St., Paterson 3	NPCorp	317	11,006	Req	39	12	No	100FM	12 Rotating General	40511
St. Joseph Hospital +[1-3] 703 Main St., Paterson 3	Church	442	12,604	None	15	12	No	100FM	10 Rotating General	40611
Perth Amboy General Hospital +[3] 530 New Brunswick Ave., Perth Amboy	NPCorp	358	16,011	None	31	12	No	100FM	14 Rotating General	87311
Muhlenberg Hospital [1-3] Park Ave. and Randolph Rd., Plainfield	NPCorp	367	16,126	Req	35	12	No	150FM	10 Rotating General	40711
Somerset Hospital +[1-3] Rehill Ave., Somerville	NPCorp	215	9,407	Req	43	12	No	150FM	8 Rotating General	93411
Overlook Hospital +[1-3] 193 Morris Ave., Summit	NPCorp	250	10,150	Req	51	12	No	150FM	12 Rotating General	40811
Holy Name Hospital +[1-3] 718 Teaneck Rd., Teaneck	Church	218	8,293	Req	31	12	No	150FM	7 Rotating General	40911
Mercer Hospital +[1-3] 446 Bellevue Ave., Trenton 8	NPCorp	245	9,352	Req	47	12	No	150FM	9 Rotating General	41011
St. Francis Hospital +[1-3] 601 Hamilton Ave., Trenton 9	Church	361	12,024	Req	39	12	No	150FM	10 Rotating General	41111
William McKinley Memorial Hospital [1-3] 750 Brunswick Ave., Trenton 8	NPCorp	181	6,671	Req	45	12	No	250FM	6 Rotating General	41211
NEW MEXICO—Hospitals, 1; Internships, 12										
Bernalillo County—Indian Hospital +[1-3] 2211 Lomas Blvd., N. E., Albuquerque	County	215	5,221	Req	54	12	No	250FM	12 Rotating General	96211
NEW YORK—Hospitals, 102; Internships, 1,878										
Albany Hospital +[1-3]-X53 New Scotland Ave., Albany 8	NPCorp	614	20,057	Req	66	12	No	150PM	19 Rotating General 6 Straight Medicine 12 Straight Surgery	41411 41432 41433
Memorial Hospital [1-3]-x57 Northern Blvd., Albany 4	NPCorp	235	6,132	Req	30	12	No	175FM	14 Rotating General	41511
St. Peter's Hospital +[3] 632 New Scotland Ave., Albany 8	Church	292	8,826	Req	61	12	205	200FM	12 Rotating General	41611
Binghamton City Hospital +[1-3] 25 Park Ave., Binghamton	City	324	11,101	Req	54	12	No	125-200FM	15 Rotating General	41811
Lawrence Hospital +[1-3] 55 Palmer Ave., Bronxville 8	NPCorp	201	6,395	Req	46	12	No	200FM	8 Rotating General	91611
Bethel Hospital +[1-3] Linden Blvd. and Rockaway Pkwy., Brooklyn 12	NPCorp	328	10,584	Req	36	12	No	125FM	24 Rotating General	41911
Brooklyn Hospital +[1-3]-X60 121 De Kalb Ave., Brooklyn 1	NPCorp	343	9,661	Req	50	12	No	160FM	16 Rotating General	42011
Coney Island Hospital +[1-3-4] Shore and Ocean Pkwy., Brooklyn 35	City	493	9,112	Req	29	12	No	125FM	10 Rotating General	42211
Cumberland Hospital +[1-3-4]-X60 39 Auburn Pl., Brooklyn 5	City	307	8,813	Req	29	12	No	125FM	9 Rotating General 2 Straight Surgery 2 Straight Pediatrics	42311 42333 42334
Greenpoint Hospital +[1-4] 300 Skillman Ave., Brooklyn 11	City	158	5,188	Req	31	12	No	125FM	12 Rotating General	42411
Jewish Hospital +[1-3-4]-X60 555 Prospect Pl., Brooklyn 38	NPCorp	474	15,214	Req	45	12	No	50FM	34 Rotating General 3 Straight Medicine 1 Straight Ob.-Gyn.	42511 42532 42535
Kings County Hospital Center +[1-3-4]-X60 451 Clarkson Ave., Brooklyn 3	City	3,167	56,579	Req	31	12	No	125FM	81 Rotating General 22 Straight Medicine 12 Straight Surgery 4 Straight Pediatrics 1 Straight Pathology 24 Mixed (Med.-Surg.)	42611 42632 42633 42634 42636 42624

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Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
NEW YORK—Continued										
Long Island College Hospital +$^{1-3}$-X60 310 Henry St., Brooklyn 1	NPCorp	401	12,009	Req	39	12	No	131PM	8 Rotating General 4 Straight Medicine 4 Straight Surgery 2 Straight Pediatrics 1 Mixed (Med.-Surg.) 2 Mixed (Med.-Ob.-Gyn.) 1 Mixed (Surg.-Med.) 2 Mixed (Surg.-Ob.-Gyn.)	42711 42732 42733 42734 42721 42720 42724 42725
Lutheran Hospital $^{1-3}$ 22 Junius St., Brooklyn 12	Church	155	6,190	Req	25	12	No	200FM	8 Rotating General	97211
Lutheran Medical Center +$^{1-3}$ 4520 4th Ave., Brooklyn 20	Church	206	6,900	Req	51	12	No	110PM	11 Rotating General	43011
Maimonides Hospital +$^{1-3}$-X60 4802 10th Ave., Brooklyn 19	*NPCorp*	*522*	*11,710*	*Req*	*33*	*12*	*No*	*50FM*	*12 Rotating General* 8 Straight Medicine 8 Mixed (Med.-Surg.-Ped.) 4 Mixed (Med.-Ob.-Gyn.-Ped.) 4 Mixed (Surg.-Ob.-Gyn.-Ped.)	42811 42832 42823 42820 42822
Methodist Hospital +$^{1-3}$-X60 506 6th St., Brooklyn 15	Church	388	11,061	Req	37	12	No	150FM	12 Rotating General 2 Straight Medicine 1 Straight Surgery 1 Straight Pediatrics	42911 42932 42933 42934
Prospect Heights Hospital $^{1-3}$ 775 Washington Ave., Brooklyn 38	NPCorp	168	5,684	None	24	12	No	200PM	6 Rotating General	87411
St. Catherine's Hospital +$^{1-3}$ 133 Bushwick Ave., Brooklyn 6	Church	282	8,047	Req	33	12	No	125FM	10 Rotating General	43111
St. John's Episcopal Hospital +^{1} 480 Herkimer St., Brooklyn 13	Church	259	8,216	Req	35	12	No	160FM	9 Rotating General 2 Straight Medicine 3 Straight Surgery 1 Straight Pediatrics 1 Straight Ob.-Gyn.	43211 43232 43233 43234 43235
St. Mary's Hospital +$^{1-3}$ 1298 St. Marks Ave., Brooklyn 13	Church	235	5,781	Req	38	12	No	125	8 Rotating General	43311
Unity Hospital +$^{1-3}$ 1545 St. Johns Pl., Brooklyn 13	NPCorp	210	6,289	Req	28	12	No	125FM	8 Rotating General	43411
Wyckoff Heights Hospital +$^{1-3}$ 374 Stockholm St., Brooklyn 37	NPCorp	270	8,800	Req	36	12	No	100FM	8 Rotating General	43511
Allied Hospitals of the Sisters of Charity +$^{1-3}$. (Sisters of Charity and Emergency Hospitals) 2157 Main St., Buffalo 14	Church	445	16,856	Req	32	12	No	225FM	18 Rotating General	44111
Buffalo General Hospital +$^{1-3-4}$-X54 100 High St., Buffalo 3	NPCorp	641	17,712	Req	64	12	206	150FM	23 Rotating General 3 Straight Medicine	43611 43632
Children's Hospital +$^{1-3}$-X54 219 Bryant St., Buffalo 22	NPCorp	325	13,096	Req	91	12	No	100FM	4 Straight Pediatrics	96534
Deaconess Hospital +$^{1-3}$ 563 Riley St., Buffalo 8	NPCorp	286	10,390	Req	40	12	206	250FM	14 Rotating General	43711
Edward J. Meyer Memorial Hospital +$^{1-3-4}$-X54 462 Grider St., Buffalo 15	County	978	12,685	Req	47	12	No	231PM	26 Rotating General	43811
Mercy Hospital +$^{1-3}$ 565 Abbott Rd., Buffalo 20	Church	360	13,172	Req	47	12	207	200FM	19 Rotating General	43911
Millard Fillmore Hospital +$^{1-3-4}$-x54 3 Gates Circle, Buffalo 9	*NPCorp*	*514*	*18,500*	*Req*	*40*	*12*	*206*	*260PM*	*15 Rotating General*	44011
Mary Imogene Bassett Hospital +$^{1-3}$-X56-x53 Atwell Rd., Cooperstown	NPCorp	111	3,051	Req	67	12	No	150PM	9 Rotating General 1 Straight Medicine	44211 44232
City Hospital at Elmhurst +$^{1-3-4}$ 79-01 Broadway, Elmhurst 73	City	824	12,674	Req	37	12	No	125FM	34 Rotating General 2 Straight Surgery	49111 49133
Arnot Ogden Memorial Hospital +$^{1-3}$ Roe Ave. and Grove St., Elmira	NPCorp	210	8,640	Req	39	12	No	200FM	4 Rotating General	44311
St. Joseph's Hospital +$^{1-3}$ 555 E. Market St., Elmira	Church	217	8,663	Req	40	12	No	390	5 Rotating General	44411
Flushing Hospital and Dispensary +$^{1-3-4}$ 44-14 Parsons Blvd., Flushing 55	NPCorp	312	11,327	Req	51	12	No	150FM	12 Rotating General	44511
Booth Memorial Hospital 56-45 Main St., Flushing	Church	204	6,161	Req	46	12	...	200FM	8 Rotating General	82211
Community Hospital +$^{1-3}$ St. Andrews Lane, Glen Cove	NPCorp	194	8,713	Req	51	12	No	200FM	8 Rotating General	44611
Glens Falls Hospital +$^{1-3}$ 100 Park St., Glens Falls	NPCorp	256	12,230	Req	38	12	No	200FM	9 Rotating General	44711
Meadowbrook Hospital +$^{1-3-4}$ Bethpage Tpke. and Carman Ave., Hempstead	County	600	15,845	Req	44	12	No	150FM	36 Rotating General	44811
Jamaica Hospital +$^{1-3}$ 89th Ave. and Van Wyck Expwy., Jamaica 18	NPCorp	260	9,633	Req	39	12	No	125FM	7 Rotating General 1 Straight Surgery	44911 44933
Mary Immaculate Hospital +$^{1-3-4}$ 152-11 89th Ave., Jamaica 32	Church	295	9,362	Req	29	12	No	150FM	8 Rotating General	45011
Queens Hospital Center +$^{1-3-4}$ 82-38 164th St., Jamaica 32	City	1,375	14,582	Req	38	12	No	125FM	34 Rotating General	45111
Charles S. Wilson Memorial Hospital +$^{1-3}$ 33 Harrison St., Johnson City	NPCorp	450	13,152	Req	39	12	No	200PM	12 Rotating General	45211
St. John's Long Island City Hospital +$^{1-3}$ 2501 Jackson Ave., Long Island City 1	Church	205	5,095	Req	32	12	209	125FM	16 Rotating General	45411
Nassau Hospital +$^{1-3}$ 1st St., Mineola	NPCorp	315	14,636	Req	42	12	No	250	8 Rotating General	45511
Northern Westchester Hospital $^{1-3}$ E. Main St., Mount Kisco	NPCorp	145	5,316	Req	40	12	No	100FM	4 Rotating General	45611
Mount Vernon Hospital +$^{1-3}$ 12 N. 7th Ave., Mount Vernon	NPCorp	281	8,984	Req	50	12	No	100FM	12 Rotating General	45711
St.	NPCorp	192	7,803	Req	38	12	No	200FM	8 Rotating General 1 Straight Pathology	45811 45836
Lor +$^{1-3-4}$-X60 Park	NPCorp	255	9,346	Req	67	12	No	50FM	14 Rotating General	96311

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NEW YORK—Continued										
New Rochelle Hospital $^{+1-3-4}$ 16 Guion Place, New Rochelle	NPCorp	323	11,087	Req	31	12	No	200FM	12 Rotating General	45911
Bellevue Hospital Center $^{+1-3}$-X56-57-59 1st Ave. and 27th St., New York 16	City	2,739	46,734	Req	38	12	No	125FM		
First Medical Division— Columbia University $^{+1-3}$ Dr. Dickinson W. Richards	....	.....	.....	Req	...	12	No	125FM	12 Mixed (Med.-Chest-Med.-Surg. or Path.)	46767
First Surgical Division— Columbia University $^{+1-3}$ Dr. Kenneth M. Lewis, Sr.	....	.....	.....	Req	...	12	No	125FM	2 Straight Surgery 4 Mixed (Surg.-Med.)	46133 46124
Second Medical Division— Cornell University $^{+1-3}$ Dr. Thomas P. Almy	....	.....	.....	Req	...	12	No	125FM	21 Straight Medicine 3 Mixed (Med.-Path.)	46232 46227
Second Surgical Division— Cornell University $^{+1-3}$ Dr. Cranston W. Holman	....	.....	.....	Req	...	12	No	125FM	7 Straight Surgery	46233
Third Medical Division— New York Univ. Col. of Med. $^{+1-3}$ Dr. Lewis Thomas	....	.....	.....	Req	...	12	No	125FM	16 Straight Medicine 4 Mixed (Surg.-Med.)	46432 46424
Third Surgical Division— New York Univ. Col. of Med. $^{+1-3}$ Dr. John H. Mulholland	....	.....	.....	Req	...	12	No	125FM	6 Straight Surgery 4 Mixed (Surg.-Med.)	46533 46524
Third Division, Dept. of Pathology New York Univ. Col. of Med. $^{+1-3}$ Dr. Marvin Kuschner	....	.....	.....	Req	...	12	No	125FM	1 Straight Pathology	93036
Third Division, Dept. of Pediatrics New York Univ. Col. of Med. $^{+1-3}$ Dr. L. Emmett Holt, Jr.	....	.....	.....	Req	...	12	283	125FM	12 Straight Pediatrics	92934
Fourth Medical Division— New York Univ. Col. of Med. $^{+1-3}$ Dr. Currier McEwen	....	.....	.....	None	...	12	283	125FM	11 Straight Medicine	46632
Fourth Surgical Division— New York Univ. Post-Graduate Medical School $^{+1-3-4}$ Dr. Louis Slattery	....	.....	.....	Req	...	12	No	125FM	8 Straight Surgery	46733
Beth Israel Hospital $^{+1-3-4}$ 10 Nathan D. Perlman Pl., New York 3	NPCorp	351	9,157	Req	40	12	No	135PM	18 Rotating General	47011
Bronx Hospital $^{+1-3-4}$ 1276 Fulton Ave., New York 56	NPCorp	329	8,913	Req	35	12	No	75FM	9 Rotating General	47111
Bro[illegible] $^{+1-3-4}$-X55 [illegible] Rd., [illegible]	City	1,200	11,185	Req	51	12	No	125FM	16 Straight Medicine 12 Straight Surgery 12 Straight Pediatrics 4 Straight Ob.-Gyn.	93132 93133 93134 93135
Fordham Hospital $^{+1-3-4}$ Southern Blvd. and Crotona Ave., New York 58	City	411	7,929	Req	29	12	211	125FM	19 Rotating General	47411
French Hospital $^{+1-3}$ 330 W. 30th St., New York 1	NPCorp	241	6,009	Req	26	12	No	75FM	12 Rotating General 2 Straight Surgery	47511 47533
Grand Central Hospital $^{+1-3-4}$ 321 E. 42nd St., New York 17	NPCorp	182	4,290	Req	41	12	No	100FM	15 Rotating General	46911
Harlem Hospital $^{+1-3-4}$ 532 Lenox Ave., New York 37	City	798	15,801	Req	30	12	No	125FM	42 Rotating General	47811
Hospital For Joint Diseases $^{+1-3-4}$ 1919 Madison Ave., New York 35	NPCorp	308	6,060	Req	54	12	212	50FM	6 Rotating General	47911
Jewish Memorial Hospital $^{+1-3-4}$ 196th St. and Broadway, New York 40	NPCorp	185	6,306	Req	31	12	No	100FM	12 Rotating General	48011
Knickerbocker Hospital $^{+1-3}$ 70 Convent Ave., New York 27	NPCorp	220	4,398	Req	65	12	244	125FM	6 Rotating General 3 Straight Medicine 3 Straight Surgery	48111 48132 48133
Lebanon Hospital $^{+1-3}$ 1650 Grand Concourse, New York 57	NPCorp	260	7,900	Req	42	12	No	75FM	13 Rotating General 1 Straight Surgery	48211 48233
Lenox Hill Hospital $^{+1-3-4}$ 111 E. 76th St., New York 21	NPCorp	435	11,878	Req	42	12	213	125PM	23 Rotating General	48311
Lincoln Hospital $^{+1-3-4}$ 320 Concord Ave., New York 54	City	394	13,213	Req	35	12	No	125FM	16 Rotating General	48411
Misericordia Hospital $^{+1-3}$ 531 E. 86th St., New York 28	Church	208	4,526	Req	50	12	No	100FM	12 Rotating General	48611
Montefiore Hospital $^{+1-3-4}$-X56 210th St. and Bainbridge Ave., New York 67	NPCorp	613	9,792	None	46	12	No	117PM	32 Mixed (Med.-Surg.-Pul.-Neuro.-Neoplastic)	48785
Morrisania City Hospital $^{+1-3-4}$ 168th St. and Gerard Ave., New York 52	City	461	11,015	Req	30	12	No	125FM	18 Rotating General	48811
Mother Cabrini Memorial Hospital $^{+1-3}$ 611 Edgecombe Ave., New York 32	Church	170	3,867	Req	32	12	No	100FM	8 Rotating General	48911
Mount Sinai Hospital $^{+1-4}$-X56 1 E. 100th St., New York 29	NPCorp	1,006	21,619	Req	53	12	No	40FM	43 Rotating General	49011
New York Hospital $^{+1-3-4}$-X57 525 E. 68th St., New York 21	NPCorp	1,430	27,125	None	70	12	No	143PM	18 Straight Medicine 16 Straight Surgery 2 Straight Pediatrics 3 Straight Pathology	49232 49233 49234 49236
*New York Infirmary $^{+2-3-4}$ Stuyvesant Square E. and 15th St., New York 3	NPCorp	190	4,800	Req	53	12	No	100FM	7 Rotating General	.....
New York Polyclinic Medical School and Hospital $^{+1-3-4}$ 345 W. 50th St., New York 19	NPCorp	340	9,165	Req	56	12	No	100FM	8 Rotating General	49411
Presbyterian Hospital $^{+1-4}$-X56 622 W. 168th St., New York 32	NPCorp	1,516	38,378	Req	62	12	No	208	12 Straight Medicine 12 Straight Surgery 3 Straight Pathology	49532 49533 49536
Roosevelt Hospital $^{+1-3-4}$-X56 428 W. 59th St., New York 19	NPCorp	459	10,391	Req	47	12	No	100PM	8 Mixed (Med.-Ped.-Surg.) 7 Mixed (Surg.-Gyn.-Med.)	49623 49672
St. Clare's Hospital $^{+1-3}$ 415 W. 51st St., New York 19	Church	440	10,701	Req	39	12	No	127PM	13 Rotating General 1 Straight Medicine 2 Straight Surgery	49711 49732 49733

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NEW YORK—Continued

Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
St. Luke's Hospital +1-3-4-X56 421 W. 113th St., New York 25	NPCorp	523	17,301	Req	68	12	No	50FM	8 Mixed (9 mo. Med.-3 mo. Surg.) 8 Mixed (9 mo. Surg.-3 mo. Med.) 4 Straight Pediatrics	49083 49084 49034
St. Vincent's Hospital +1-3-x59 153 W. 11th St., New York 11	Church	768	18,041	Req	53	12	213	80FM	23 Rotating General 4 Straight Medicine 6 Straight Surgery	50011 50032 50033
Sydenham Hospital +1-3-4 565 Manhattan Ave., New York 27	City	218	5,561	Req	37	12	No	125FM	9 Rotating General	50111
Mount St. Mary's Hospital 1-3 515 6th St., Niagara Falls	Church	189	6,306	Req	40	12	No	275FM	6 Rotating General	50311
Niagara Falls Memorial Hospital 1-3 621 10th St., Niagara Falls	NPCorp	329	10,929	Req	52	12	No	200FM	9 Rotating General	93511
United Hospital +1-3 406 Boston Post Rd., Port Chester	NPCorp	238	7,640	Req	33	12	No	235PM	8 Rotating General	50411
St. Francis Hospital 1-3 North Rd., Poughkeepsie	Church	190	7,703	Req	34	12	...	200FM	6 Rotating General	50511
Vassar Brothers Hospital +1-3 Reade Pl., Poughkeepsie	NPCorp	248	8,733	Req	40	12	214	200FM	8 Rotating General	50611
Genesee Hospital +1-3-x62 224 Alexander St., Rochester 7	NPCorp	252	11,258	Req	72	12	No	125FM	8 Rotating General 4 Straight Medicine 4 Straight Surgery 1 Straight Pathology 1 Straight Ob.-Gyn.	50711 50732 50733 50736 50735
Highland Hospital +1-3-x62 South Ave., at Bellevue Dr., Rochester 20	NPCorp	240	8,969	Req	61	12	215	150-200FM	9 Rotating General 3 Straight Surgery	50811 50833
Rochester General Hospital +1-3-4-x62 1425 Portland Ave., Rochester 21	NPCorp	419	16,322	Req	76	12	No	125-200FM	18 Rotating General 2 Straight Medicine 2 Straight Surgery	50911 50932 50933
St. Mary's Hospital +1-3-x62 89 Genesee St., Rochester 11	Church	325	13,905	Req	56	12	No	205FM	15 Rotating General	51011
Strong Memorial-Rochester Municipal Hospitals +1-3-4-X62 260 Crittenden Blvd., Rochester 20	NPCorp	494	18,855	Req	70	12-24	No	82	12 Rotating General (24 mo.) 17 Straight Medicine 8 Straight Surgery 6 Straight Pediatrics 4 Straight Pathology 3 Straight Ob.-Gyn.	51116 51132 51133 51134 51136 51135
Ellis Hospital +1-3 x53 1101 Nott St., Schenectady 8	NPCorp	348	13,034	Req	53	12	No	125FM	18 Rotating General	51211
St. Clare's Hospital 1-3 600 McClellan St., Schenectady 4	Church	204	7,256	Req	39	12	No	150FM	12 Rotating General	51311
St. Vincent's Hospital +1-3 355 Bard Ave., Staten Island 10	Church	252	10,316	Req	34	12	No	190PM	8 Rotating General	51411
Staten Island Hospital +1-3 101 Castleton Ave., Staten Island 1	NPCorp	215	9,227	Req	35	12	No	100FM	8 Rotating General	51511
St. Joseph's Hospital +1-X61 301 Prospect Ave., Syracuse 3	Church	304	12,855	Req	46	12	No	208PM	8 Rotating General 2 Mixed (Med.-Surg.) 2 Mixed (Med.-Ped.)	51811 51824 51849
State University of New York Upstate Medical Center Hospitals (University Hospital of the Good She[illegible], Syracuse Me[illegible] ministration 766 Irving Ave., Syracuse 10	NPCorp	1,191	31,420	Req	52	12	No	208	16 Rotating General 7 Straight Medicine 6 Straight Surgery 3 Straight Pediatrics 4 Mixed (Med.-Surg.)	51611 51632 51633 51634 51624
Leonard Hospital 1-3 41 114th St., Troy	NPCorp	183	6,473	Req	28	12	216	150FM	8 Rotating General	90911
St. Mary's Hospital 3 87 Oakwood Ave., Troy	Church	225	6,115	Req	37	12	No	175FM	6 Rotating General	51911
Samaritan Hospital +1-3 Peoples and Burdett Aves., Troy	NPCorp	162	7,061	Req	33	12	No	250FM	9 Rotating General	52011
Grasslands Hospital +1-3-4 Valhalla	County	606	5,172	Req	58	12	No	150FM	10 Mixed (Med.-Surg.-Ped.) 10 Mixed (Surg.-Med.-Ob.)	52123 52169
White Plains Hospital +1-3 41 E. Post Rd., White Plains	NPCorp	198	7,220	Req	44	12	No	150FM	8 Rotating General	52311
St. John's Riverside Hospital +1-3 65 Ashburton Ave., Yonkers	NPCorp	207	6,748	Req	30	12	No	120FM	8 Rotating General	52411
St. Joseph's Hospital 1-3 127 S. Broadway, Yonkers 2	Church	174	5,608	Req	45	12	No	100FM	8 Rotating General	52511
Yonkers General Hospital +1-3 127 Ashburton Ave., Yonkers 2	NPCorp	145	5,356	Req	33	12	No	100FM	7 Rotating General	52611

NORTH CAROLINA—Hospitals, 11; Internships, 217

Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
Memorial Mission Hospital of Western North Carolina 1 509 Biltmore Ave., Asheville	NPCorp	329	14,185	Req	26	12	No	250PM	8 Rotating General	94911
North Carolina Memorial Hospital +1-3-X63 Pittsboro Rd., Chapel Hill	State	350	8,930	Req	82	12	230	150	12 Straight Medicine 8 Straight Surgery 4 Straight Pediatrics 4 Straight Pathology 9 Mixed (Med.-Ped.)	90032 90033 90034 90036 90049
Charlotte Memorial Hospital +1-4 1400 Scott Ave., Charlotte 3	NPCorp	332	14,249	Req	72	12	No	270PM	10 Rotating General	52711
Duke Hospital +1-3-4-X64 Durham	NPCorp	561	17,777	Req	62	12	No	25FM	24 Straight Medicine 16 Straight Surgery 10 Straight Pediatrics 3 Straight Pathology 1 Straight Ob.-Gyn. 4 Mixed (Ob.-Ped.)	52932 52933 52934 52936 52935 52983

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NORTH CAROLINA- Continued										
Watts Hospital +1-3-x63-64 Broad St. and Club Blvd., Durham	NPCorp	293	11,695	Req	39	12	No	250FM	10 Rotating General 3 Rot. Med. Major 2 Straight Medicine 2 Straight Surgery 1 Straight Pediatrics 1 Straight Ob.-Gyn. 3 Mixed (Med.-Surg.-Ob-Gyn.)	87711 87712 87732 87733 87734 87735 87722
Moses H. Cone Memorial Hospital +1-3 1200 N. Elm St., Greensboro	NPCorp	293	11,835	Req	61	12	No	300PM	16 Rotating General	91911
Rex Hospital +1-x63 1311 St. Mary's St., Raleigh	NPCorp	310	15,506	Req	35	12	No	200	12 Rotating General	53211
James Walker Memorial Hospital 10th and Rankin Sts., Wilmington	NPCorp	250	10,815	Req	29	12	...	275FM	8 Rotating General	53411
City Memorial Hospital +1-3 1 Hospital St., Winston-Salem 4	City	291	12,696	Req	39	12	No	262PM	16 Rotating General	53511
Kate Bitting Reynolds Memorial Hospital +1-3 1101 E. 7th St., Winston-Salem 4	City	176	6,117	Req	17	12	No	262PM	8 Rotating General	53611
North Carolina Baptist Hospital +1-3-4-X65 300 S. Hawthorne Rd., Winston-Salem 7	Church	391	14,378	Req	60	12	No	150PM	8 Straight Medicine 6 Straight Surgery 3 Straight Pediatrics 3 Straight Pathology 2 Mixed (Med.-Ob.-Gyn.-Ped.)	53732 53733 53734 53736 53720
NORTH DAKOTA—Hospitals, 3; Internships, 16										
St. John's Hospital 3-1,7 365 6th Ave. S., Fargo	Church	175	7,000	Req	60	12	No	225FM	6 Rotating General	87011
St. Luke's Hospital +1-3 727 Broadway, Fargo	NPCorp	185	7,599	Req	41	12	No	225FM	6 Rotating General	52011
Grand Forks Deaconess Hospital 1-3 212 S. 4th St., Grand Forks	NPCorp	150	6,321	Req	63	12	No	175FM	4 Rotating General	54011
OHIO—Hospitals, 54; Internships, 810										
Akron City Hospital +1-3 525 E. Market St., Akron 5	NPCorp	485	21,085	Req	67	12	226	200FM	24 Rotating General	51111
Akron General Hospital +1-3 400 Wabash Ave., Akron 7	NPCorp	435	14,796	Req	46	12	226	200FM	20 Rotating General	51211
St. Thomas Hospital +1-3 444 N. Main St., Akron 10	Church	260	10,883	Req	70	12	232	200FM	15 Rotating General	51311
Barberton Citizens Hospital +1-3 Tuscora Park, Barberton	NPCorp	235	10,263	Req	42	12	No	225FM	12 Rotating General	93411
Aultman Hospital +1-3 625 Clarendon Ave., S.W., Canton 10	NPCorp	503	17,072	Req	48	12	No	250PM	16 Rotating General	51411
Mercy Hospital +1-3 723 Market Ave. N., Canton 2	Church	406	15,545	Req	38	12	No	125FM	12 Rotating General	51511
Bethesda Hospital +1-3 Oak and Reading Rd., Cincinnati 6	Church	235	10,079	Req	39	12	227	210PM	6 Rotating General 6 Mixed (Med.-Ob.-Surg.)	51611 51629
Christ Hospital +1.. 2139 Auburn Ave.	NPCorp	356	12,197	Req	19	12	227	175FM	13 Rotating General	51711
University of Cincinr Cincinnati General X 3231 Burnet Ave.,	City	810	16,110	Req	58	12	233	100FM	52 Rotating General	51811
Good Samaritan Hospital +1-3 3217 Clifton Ave., Cincinnati 20	Church	591	21,193	None	46	12	No	200FM	15 Rotating General 4 Straight Surgery	55011 55033
Jewish Hospital +1-3 Burnet Ave., Cincinnati 29	NPCorp	397	16,670	Req	56	12	No	175FM	16 Rotating General	55111
St. Mary's Hospital +1-3 816 Betts St., Cincinnati 14	Church	204	5,598	Req	44	12	No	225FM	12 Rotating General	55211
Cleveland Clinic Hospital + 2050 E. 93rd St., Cleveland 6	NPCorp	450	13,851	Req	69	12	231	100FM	12 Rotating General 4 Straight Surgery	96811 96833
Cleve Gen X 32	County	891	10,714	Req	65	12	No	125FM	16 Rotating General 4 Straight Medicine 4 Straight Surgery 2 Straight Pediatrics	55311 55332 55333 55334
Evangelical Deaconess Hospital +1-3 4229 Pearl Rd., Cleveland 9	Church	209	10,300	Req	40	12	No	100FM	12 Rotating General	99011
Fairview Park Hospital +1-3 18101 Lorain Ave., Cleveland 11	Church	294	12,757	Req	46	12	No	200FM	12 Rotating General	55411
Huron Road Hospital +1-3 13951 Terrace Rd., Cleveland 12	NPCorp	355	12,149	Req	54	12	No	200FM	12 Rotating General	57111
Lutheran Hospital +1-3 2609 Franklin Blvd., Cleveland 13	Church	189	7,228	None	60	12	No	235PM	15 Rotating General	55611
Mount Sinai Hospital +1-3-4 1800 E. 105th St., Cleveland 6	NPCorp	348	13,901	Req	48	12	No	150FM	18 Rotating General	55711
St. Alexis Hospital +1-3 5163 Broadway, Cleveland 27	Church	294	10,514	Req	40	12	No	200FM	8 Rotating General	55811
St. John's Hospital +1-3 7911 Detroit Ave., Cleveland 2	Church	268	9,115	Req	32	12	No	200FM	7 Rotating General	55911
St. Luke's Hospital +1-3-4 11311 Shaker Blvd., Cleveland 4	Church	477	18,193	Req	56	12	No	180FM	21 Rotating General	56011
St. Vincent Charity Hospital +1-3-4 2222 Central Ave., Cleveland 15	Church	360	10,378	Req	51	12	228	200FM	15 Rotating General	56111
University Hospitals +1-3-X67 2065 Adelbert Rd., Cleveland 6	NPCorp	916	23,424	Req	67	12	No	125PM	16 Rotating General 12 Straight Medicine 8 Straight Surgery 4 Straight Pediatrics 2 Straight Pathology	56211 56232 56233 56234 56236
Doctors Hospital + 12345 Cedar Rd., Cleveland Heights 6	NPCorp	205	6,264	None	46	12	No	100FM	8 Rotating General	56311
Grant Hospital +3 125 S. Grant Ave., Columbus 15	NPCorp	243	10,353	None	38	12	217	250FM	12 Rotating General	56411
Mount Carmel Hospital +1 793 W. State St., Columbus 22	Church	409	16,912	None	52	12	217	250FM	18 Rotating General	56511

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OHIO—Continued										
University Hospitals +$^{1-4}$-X68 10th and Perry Sts., Columbus 10	State	583	20,921	Req	72	12	218	152	24 Rotating General 12 Straight Medicine 12 Straight Surgery	57011 57062 57063
White Cross Hospital +$^{1-3}$ 700 N. Park St., Columbus 8	Church	340	14,871	Req	56	12	217	275PM	14 Rotating General	57711
Good Samaritan Hospital +^{1} 1425 W. Fairview Ave., Dayton 6	Church	393	16,989	Req	31	12	No	260FM	10 Rotating General	57911
Miami Valley Hospital +$^{1-3-4}$ 1 Wyoming St, Dayton 9	NPCorp	671	23,129	Req	49	12	No	300FM	16 Rotating General	59211
St. Elizabeth Hospital +$^{1-3}$ 49 Hopeland St., Dayton 8	Church	450	16,633	Req	41	12	No	200FM	12 Rotating General	57011
Elyria Memorial Hospital +$^{1-3}$ 630 E. River St., Elyria	NPCorp	242	8,857	Req	35	12	No	150-200FM	5 Rotating General	96111
Euclid-Glenville Hospital $^{1-3}$ E. 185th St. and Lake Erie, Euclid 19	NPCorp	205	8,604	Req	42	12	No	125FM	10 Rotating General	55111
Marymount Hospital +$^{1-3}$ 12300 McCracken Rd., Garfield Heights 25	Church	190	7,304	Req	40	12	No	150FM	12 Rotating General	57211
Mercy Hospital +$^{1-3}$ 116 Dayton St, Hamilton	Church	300	12,783	Req	50	12	219	150FM	12 Rotating General	57311
Lakewood Hospital +$^{1-3}$ 14519 Detroit Ave., Lakewood 7	City	272	10,441	Req	38	12	No	175FM	6 Rotating General	57411
Lima Memorial Hospital +$^{1-3}$ Linden and Mobel Aves, Lima	NPCorp	271	10,486	Req	36	12	No	250FM	12 Rotating General	57511
St. Rita's Hospital +$^{1-3}$ 801 W. High St., Lima	Church	290	12,791	Req	37	12	235	275PM	12 Rotating General	57711
St. Joseph Hospital +$^{1-3}$ 2026 Broadway, Lorain	Church	216	9,956	Req	35	12	220	250FM	4 Rotating General	97311
Mercy Hospital 1343 N. Fountain Blvd, Springfield	Church	305	10,667	Req	47	12	No	250FM	9 Rotating General	57811
Springfield City Hospital +^{1} 2615 E High St., Springfield 49	City	289	10,168	Req	54	12	No	250FM	10 Rotating General	57711
Ohio Valley Hospital +^{3} 380 Summit Ave., Steubenville	NPCorp	210	10,426	Req	25	12	No	225FM	8 Rotating General	92711
Flower Hospital +$^{1-3}$ 3350 Collingwood Blvd, Toledo 10	Church	190	7,753	Req	43	12	221	250FM	9 Rotating General	57911
*Maumee Valley Hospital +$^{1-3}$ 2025 Arlington Ave., Toledo 9	NPCorp	233	4,704	Req	65	12	No	250FM	10 Rotating General	.....
Mercy Hospital +$^{1-3}$ 2221 Madison Ave, Toledo 2	Church	350	12,260	Req	54	12	No	250FM	14 Rotating General	58011
Riverside Hospital ^{1} 1609 Summit St., Toledo 11	NPCorp	175	6,688	Req	36	12	No	265FM	7 Rotating General	58111
St. Charles Hospital +$^{1-3}$ Wheeling and Navarre Sts., Toledo 5	Church	230	8,987	Req	50	12	No	250FM	9 Rotating General	98111
St. Vincent's Hospital +$^{1-3}$ 2213 Cherry St., Toledo 8	Church	438	18,001	Req	43	12	222	250FM	13 Rotating General	58211
Toledo Hospital +$^{1-3}$ 2142 N. Cove Blvd., Toledo 6	NPCorp	447	14,253	Req	69	12	No	275FM	20 Rotating General	58311
Trumbull Memorial Hospital +$^{1-3}$ 1350 E. Market St., Warren	NPCorp	330	16,750	None	43	12	No	250FM	12 Rotating General	98611
St. Elizabeth Hospital +$^{1-3}$ 1044 Belmont Ave., Youngstown 4	Church	526	22,586	Req	35	12	No	225FM	18 Rotating General	58411
Youngstown Hospital +$^{1-3-4}$ Oak Hill and Francis St., Youngstown 1 Gypsy Lane at Goleta Ave., Youngstown 4	NPCorp	710	24,286	Req	57	12	No	300-350PM	24 Rotating General	58511
Good Samaritan Hospital ^{1} 1247 Ashland Ave, Zanesville	Church	301	9,255	Req	25	12	No	225FM	6 Rotating General	98111
OKLAHOMA—Hospitals, 7; Internships, 96										
Mercy Hospital—Oklahoma City General ^{1} 501 N.W. 12th St., Oklahoma City 3	Church	223	10,106	Req	44	12	223	250PM	9 Rotating General	58611
St. Anthony Hospital +-x69 601 N.W. 9th St., Oklahoma City 3	Church	415	17,929	Req	30	12	No	250PM	10 Rotating General	58711
University of Oklahoma Hospitals +^{1}-X69 800 N.E. 13th St., Oklahoma City 4	State	469	9,628	Req	62	12	236	175PM	12 Rotating General 6 Rot. (Med. Major) 4 Rot. (Surg. Major) 2 Rot. (Ped. Major) 1 Rot. (Ob.-Gyn. Major) 3 Straight Pathology	58811 58812 58813 58814 58815 58867
Veterans Administration Hospital +^{1}-X69 921 N.E. 13th St., Oklahoma City 4	Fed	488	5,019	None	75	12	223	......	4 Straight Medicine	58962
Wesley Hospital +^{1}-x69 300 N.W. 12th St., Oklahoma City 3	Part	207	10,205	Req	45	12	223	250FM	8 Rotating General	59011
Hillcrest Medical Center +$^{1-3}$ 1653 E. 12th St., Tulsa 20	NPCorp	350	17,849	Req	35	12	No	150FM	25 Rotating General	59111
St. John's Hospital +^{1} 1923 S. Utica St., Tulsa 4	Church	640	23,146	Req	31	12	237	150-200FM	12 Rotating General	59211
OREGON—Hospitals, 7; Internships, 101										
Sacred Heart General Hospital ^{1} 751 E. 12th Ave., Eugene	Church	270	11,956	Req	77	12	No	250PM	8 Rotating General	59311
Emanuel Hospital +$^{1-3}$ 2801 N. Gantenbein Ave., Portland 12	Church	448	18,502	Req	59	12	No	250PM	14 Rotating General	59411
Good Samaritan Hospital +$^{1-3}$ 1015 N.W. 22nd Ave., Portland 10	Church	462	15,035	Req	68	12	No	250PM	16 Rotating General 1 Straight Pathology	59511 59567
Portland Sanitarium and Hospital $^{1-3}$ 932 S.E. 60th Ave., Portland 15	Church	176	9,706	Req	53	12	No	200PM	8 Rotating General	59611

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OREGON—Continued										
Providence Hospital +[1-3] 700 N.E. 47th Ave., Portland 13	Church	300	12,984	Req	69	12	224	250PM	12 Rotating General	59711
St. Vincent's Hospital +[1-3] 2447 N.W. Westover Rd., Portland 10	Church	413	14,098	Req	56	12	225	250PM	12 Rotating General	59811
University of Oregon Medical School Hospitals and Clinics +[1-4]-X70 3181 S.W. Sam Jackson Park Rd., Portland 1	State	592	11,491	Req	71	12	No	100FM	30 Rotating General	59911
PENNSYLVANIA—Hospitals, 76; Internships, 873										
Abington Memorial Hospital +[1-3-4]-x73 1200 Old York Rd., Abington	NPCorp	355	11,291	Req	56	12	No	150FM	12 Rotating General	60011
Allentown Hospitals +[1-3] 17th and Chew Sts., Allentown	NPCorp	500	15,382	Req	43	12	No	200-225FM	14 Rotating General	60111
Sacred Heart Hospital +[1-3] 4th and Chew Sts., Allentown	Church	164	12,660	Req	42	12	No	225FM	10 Rotating General	60211
Altoona Hospital +[1-3] 700 Howard Ave., Altoona	NPCorp	325	10,188	Req	34	12	No	300PM	12 Rotating General	60311
Mercy Hospital [1-3] 2601 8th Ave., Altoona	NPCorp	165	5,667	Req	31	12	No	360FM	4 Rotating General	60411
St. Luke's Hospital +[1-3] 801 Ostrum St., Bethlehem	NPCorp	397	11,398	Req	50	12	No	200FM	12 Rotating General	60511
Lower Bucks County Hospital +[1] Bath Rd. and Orchard Ave., Bristol	NPCorp	150	10,558	Req	88	12	No	200FM	8 Rotating General	97411
Bryn Mawr Hospital +[1-3] Bryn Mawr Ave., Bryn Mawr	NPCorp	358	11,469	Req	63	12	No	175FM	12 Rotating General	60611
Butler County Memorial Hospital [1-3] East Brady St., Butler	NPCorp	245	9,302	Req	22	12	No	300FM	8 Rotating General	98911
Chester Hospital +[1-3] 9th and Barclay Sts., Chester	NPCorp	267	9,622	Req	59	12	No	250FM	8 Rotating General	60711
George F. Geisinger Memorial Hospital +[1-3-4] Danville	NPCorp	273	10,212	Req	66	12	No	175FM	12 Rotating General	60811
Thomas M. Fitzgerald Mercy Hospital + Lansdowne Ave. and Baily Rd., Darby	Church	360	12,371	Req	48	12	No	200FM	12 Rotating General	60911
Easton Hospital +[1-3] 21st and Lehigh Sts., Easton	NPCorp	255	8,415	Req	59	12	No	200FM	6 Rotating General	61011
Hamot Hospital +[1-3] 4 E. 2nd St., Erie 6	NPCorp	382	13,866	Req	41	12	No	200-225FM	8 Rotating General	61111
St. Vincent's Hospital +[1-3] 232 West 25th St., Erie 6	NPCorp	328	12,832	Req	42	12	No	250FM	10 Rotating General	61211
Westmoreland Hospital [1-3] 532 W. Pittsburgh St., Greensburg	NPCorp	264	10,505	Req	38	12	245	350FM	4 Rotating General	61311
Harrisburg Hospital +[1-3-4]-X71 Front and Mulberry Sts., Harrisburg	NPCorp	512	21,388	Req	58	12	No	200-250FM	18 Rotating General	61411
Harrisburg Polyclinic Hospital +[1] 3rd and Radnor Sts., Harrisburg	NPCorp	500	14,832	Req	47	12	No	...	16 Rotating General	61511
Conemaugh Valley Memorial Hospital +[1-3] 1086 Franklin St., Johnstown	NPCorp	433	13,632	Req	32	12	No	250FM	12 Rotating General	61611
Mercy Hospital 1020 Franklin St., Johnstown	Church	240	7,475	Req	34	12	No	150FM	8 Rotating General	81611
Lancaster General Hospital +[1-3] 525 N. Duke St., Lancaster	NPCorp	450	14,572	Req	38	12	No	200FM	12 Rotating General	61811
St. Joseph's Hospital +[1] 250 College Ave., Lancaster	Church	271	8,126	Req	49	12	No	200FM	6 Rotating General	61911
McKeesport Hospital [1] 1500 5th Ave., McKeesport	NPCorp	445	13,856	Req	30	12	No	300FM	10 Rotating General	62011
Allegheny Valley Hospital [1-3] 1301 Carlisle St., Natrona Heights	NPCorp	216	9,071	Req	34	12	246	275FM	4 Rotating General	93611
Montgomery Hospital +[1-3] Powell and Fornance Sts., Norristown	NPCorp	179	8,442	Req	49	12	No	250FM	6 Rotating General	62111
Sacred Heart Hospital +[1-3] 1430 DeKalb St., Norristown	Church	175	8,252	Req	34	12	No	250FM	2 Rotating General	62211
Albert Einstein Medical Center York and Tabor Rds., Philadelphia 41 Northern Division +[1-3-4]-X73 Southern Division +[1-3]-X71	NPCorp	710	23,227	Req	47	12	No	75FM	39 Rotating General	63111
Chestnut Hill Hospital +[1] 8835 Germantown Ave., Philadelphia 18	NPCorp	135	6,222	Req	62	12	No	250FM	6 Rotating General	91011
Episcopal Hospital +[1-3-4]-X72 Front St., and Lehigh Ave., Philadelphia 25	NPCorp	160	9,014	Req	44	12	No	150FM	12 Rotating General	62311
Frankford Hospital +[1-3] 4440 Frankford Ave., Philadelphia 24	NPCorp	188	8,313	Req	47	12	No	250FM	8 Rotating General	62411
Germantown Dispensary and Hospital +[1-3]-X72-x75 E. Penn and Wister Sts., Philadelphia 44	NPCorp	308	9,742	Req	56	12	No	150FM	12 Rotating General	62511
Graduate Hospital of the University of Pennsylvania +[1-3-4]-X74 19th and Lombard Sts., Philadelphia 46	NPCorp	354	7,979	Req	54	12	238	75FM	12 Rotating General	62611
Hahnemann Medical College and Hospital +[1]-X71 230 N. Broad St., Philadelphia 2	NPCorp	562	14,026	None	53	12	No	75FM	14 Rotating General	62711
Hospital of the University of Pennsylvania +[1-3-4]-X74 3400 Spruce St., Philadelphia 4	NPCorp	810	21,188	Req	68	12	No	42FM	32 Rotating General	62811
Hospital of the Woman's Medical College of Pennsylvania +[1]-X75 3300 Henry Ave., Philadelphia 29	NPCorp	205	6,603	Req	53	12	No	100FM	8 Rotating General	62911

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PENNSYLVANIA—Continued										
Jefferson Medical College Hospital +$^{3-4}$-X72 10th and Sansom Sts., Philadelphia 7	NPCorp	931	20,120	Req	50	12	No	50FM	36 Rotating General	63111
Lankenau Hospital +$^{1-3}$-X72 Lancaster and City Line Aves., Philadelphia 31	NPCorp	335	10,977	Req	57	12	No	175FM	12 Rotating General	63211
Memorial Hospital $^{1-3}$ 5800 Ridge Ave., Philadelphia 28	NPCorp	157	4,823	Req	41	12	247	250FM	6 Rotating General	63311
Mercy-Douglass Hospital +^{1}-x74 5000 Woodland Ave., Philadelphia 43	NPCorp	244	3,936	Req	47	12	No	100FM	6 Rotating General	63411
Methodist Episcopal Hospital +^{1}-X72 Broad and Wolf Sts., Philadelphia 48	Church	229	6,364	Req	41	12	No	200FM	8 Rotating General	63511
Misericordia Hospital +^{1}-x72 54th and Cedar Ave., Philadelphia 43	Church	285	9,502	Req	54	12	No	200FM	10 Rotating General	63611
Nazareth Hospital +$^{1-3}$ 8050 Holme Ave., Philadelphia 15	Church	200	9,054	Req	53	12	286	300FM	8 Rotating General	63811
Northeastern Hospital $^{1-3}$ Allegheny Ave. and Tulip St., Philadelphia 34	NPCorp	151	4,559	Req	50	12	218	......	4 Rotating General	97511
Pennsylvania Hospital +$^{1-3}$-X74 8th and Spruce Sts., Philadelphia 7	NPCorp	409	12,648	Req	66	12	219	FM	18 Rotating General	63911
Philadelphia General Hospital +$^{1-3-4}$-X71-72-73-74-75 34th St. and Curie Ave., Philadelphia 4	City	1,779	23,623	Req	55	12	No	59FM	90 Rotating General	64011
Presbyterian Hospital +$^{1-3}$-X74 51 N. 39th St., Philadelphia 4	Church	335	8,521	Req	69	12	No	150FM	12 Rotating General	64111
St. Agnes Hospital ^{1}-x71 1900 S. Broad St., Philadelphia 45	Church	340	8,270	Req	29	12	No	300FM	8 Rotating General	64211
St. Joseph's Hospital +$^{1-3-4}$ 16 St. and Girard Ave., Philadelphia 30	Church	200	6,017	Req	56	12	No	300FM	6 Rotating General	64311
St. Mary's Hospital +$^{1-3}$-x72 1567 E. Palmer St , Philadelphia 25	Church	255	6,629	Req	54	12	No	300FM	6 Rotating General	64511
Woman's Hospital +^{4} Preston and Parrish Sts., Philadelphia 4	NPCorp	165	5,074	Req	52	12	No	150FM	6 Rotating General	64711
Allegheny General Hospital +$^{1-4}$ 320 E. North Ave., Pittsburgh 12	NPCorp	594	15,135	Req	37	12	No	182FM	18 Rotating General	64811
Mercy Hospital +$^{1-3}$-X76 1400 Locust St., Pittsburgh 19	Church	650	15,762	Req	40	12	No	225FM	16 Rotating General	64911
Montefiore Hospital +$^{1-3-4}$ 3459 5th Ave., Pittsburgh 13	NPCorp	321	10,879	Req	51	12	No	200FM	12 Rotating General	65011
Pittsburgh Hospital +$^{1-3}$ 6655 Frankstown Ave., Pittsburgh 6	NPCorp	225	7,229	Req	33	12	No	200FM	6 Rotating General	65111
Health Center Hospitals—University of Pittburgh School of Medicine +^{1}-X76 3630 Terrace St., Pittsburgh 13	NPCorp	1,083	33,085	Req	67	12	281	100FM	13 Rotating General	65211
St. Francis General Hospital and Rehabilitation Institute +$^{1-3-4}$-X76 108 45th St., Pittsburgh 1	NPCorp	683	15,314	Req	38	12	No	225FM	20 Rotating General	88111
St. John's General Hospital +$^{1-3}$ 3339 McClure Ave., Pittsburgh 12	NPCorp	203	6,047	Req	37	12	No	200FM	4 Rotating General	65411
St. Joseph's Hospital and Dispensary $^{1-3}$ 2117 Carson St., Pittsburgh 3	Church	170	5,500	Req	40	12	No	400FM	6 Rotating General	65511
St. Margaret Memorial Hospital +$^{1-3}$ 265 46th St., Pittsburgh 1	Church	156	4,433	Req	56	12	No	275FM	4 Rotating General	65611
Shadyside Hospital +^{1} 5230 Centre Ave., Pittsburgh 32	NPCorp	376	9,485	Req	54	12	No	350FM	10 Rotating General	65711
South Side Hospital +$^{1-3-4}$ S. 20th and Jane Sts., Pittsburgh 3	NPCorp	361	9,462	Req	39	12	No	350FM	9 Rotating General	65811
Western Pennsylvania Hospital +$^{1-4}$ 4800 Friendship Ave., Pittsburgh 24	NPCorp	560	15,993	Req	54	12	No	200FM	18 Rotating General	65911
Community General Hospital +$^{1-3}$ 145 N. 6th St., Reading	NPCorp	181	6,150	Req	49	12	No	250FM	5 Rotating General	66011
Reading Hospital +^{1} 6th and Spruce Sts., Reading	NPCorp	517	13,533	Req	50	12	No	200FM	14 Rotating General	66111
St. Joseph's Hospital +$^{1-3}$ 1215 Walnut St., Reading	Church	208	6,929	Req	42	12	No	......	6 Rotating General	66211
Robert Packer Hospital +$^{1-3}$-X71 S. Wilbur Ave., Sayre	NPCorp	340	11,910	Req	57	12	No	150FM	12 Rotating General	66411
Scranton State Hospital +$^{1-4}$ 201 Mulberry St., Scranton 3	State	267	5,661	Req	30	12	No	248FM	10 Rotating General	66611
Sewickley Valley Hospital ^{1} Blackburn Rd., Sewickley	NPCorp	230	8,034	Req	37	12	No	300FM	8 Rotating General	66711
Uniontown Hospital $^{1-3}$ 500 W. Berkeley St., Uniontown	NPCorp	278	9,223	Req	37	12	No	300FM	5 Rotating General	66811
Washington Hospital $^{1-3}$ 155 Wilson Ave., Washington	NPCorp	312	9,749	Req	29	12	No	325FM	8 Rotating General	66911
Chester County Hospital +$^{1-4}$ 500 E. Marshall St., West Chester	NPCorp	189	5,460	Req	50	12	No	350FM	6 Rotating General	88211
Mercy Hospital +$^{1-3}$ 196 Hanover St., Wilkes-Barre	NPCorp	193	6,678	Req	27	12	No	300FM	4 Rotating General	67011
Wilkes-Barre General Hospital +^{1} N. River and Auburn Sts., Wilkes-Barre	NPCorp	379	9,797	Req	34	12	No	200FM	10 Rotating General	67111
Columbia Hospital +$^{1-3}$ 312 Penn Ave., Wilkinsburg 21	NPCorp	186	6,891	Req	39	12	No	300FM	6 Rotating General	67211

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PENNSYLVANIA—Continued										
Williamsport Hospital +^{1} 777 Rural Ave., Williamsport 20	NPCorp	312	9,446	Req	36	12	No	225-250FM	8 Rotating General	67311
York Hospital +^{1} S. George St. and Rathton Rd., York	NPCorp	357	13,793	Req	54	12	No	275FM	10 Rotating General	67411
PUERTO RICO—Hospitals, 9; Internships, 124										
*Aguadilla District Hospital +$^{1-3}$ Aguadilla	State	280	6,706	Req	84	12	No	100FM	12 Rotating General	.....
*Arecibo District Hospital +$^{1-3}$ Lares Rd., Arecibo	State	280	7,459	Req	64	12	No	100FM	15 Rotating General	.....
Bayamon District Hospital +$^{1-3}$x77 Alejandro Ruiz Building, Caparro Heights	State	280	7,802	Req	68	12	No	100FM	16 Rotating General	81711
*Fajardo District Hospital General Valero Ave., Fajardo	State	280	6,551	...	33	..	...	...	12 Rotating General	.....
*Hospital de Damas +$^{1-3}$ Concordia St., Ponce	Church	153	5,736	Req	27	12	No	100FM	7 Rotating General	.....
Ponce District General Hospital +$^{1-3}$ Ponce	State	448	7,975	Req	52	12	No	100FM	16 Rotating General	81911
*Rio Piedras Municipal Hospital $^{1-3}$ Pineiro St., Rio Piedras	City	205	7,265	Req	50	12	No	100FM	14 Rotating General	.....
*Presbyterian Hospital $^{1-3}$ Ashford Ave., San Juan	NPCorp	132	3,826	Req	28	12	No	75FM	8 Rotating General	.....
San Juan City Hospital +$^{1-3}$-X77 De Diego Ave., San Juan, 34	City	310	10,542	Req	47	12	...	100FM	24 Rotating General	81811
RHODE ISLAND—Hospitals, 6; Internships, 62										
Newport Hospital +$^{1-3}$ Friendship St., Newport	NPCorp	220	7,111	Req	35	12	No	100-150FM	8 Rotating General	67511
Memorial Hospital +$^{1-3}$ Prospect St., Pawtucket	NPCorp	225	8,412	Req	37	12	No	200FM	8 Rotating General	67611
Miriam Hospital +$^{1-3}$ 164 Summit Ave., Providence 6	NPCorp	160	6,102	Req	44	12	250	150FM	8 Rotating General	95311
Rhode Island Hospital +$^{1-3-4}$ 593 Eddy St., Providence 2	NPCorp	659	19,395	Req	41	24	250	100FM	18 Rotating General	67711
Roger Williams General Hospital ^{3} 825 Chalkstone Ave., Providence 8	NPCorp	211	8,021	Req	26	12	No	200FM	8 Rotating General	67811
St. Joseph's Hospital $^{1-3-4}$ 21 Peace St., Providence 7	Church	310	8,015	Req	25	12	251	200FM	12 Rotating General	67911
SOUTH CAROLINA—Hospitals, 6; Internships, 101										
Medical College of South Carolina Teaching Hospitals (Roper Hospital, 300 Calhoun St., Medical College Hospital, 55 Doughty St.) +$^{1-3}$-X78 Charleston	State, NPCorp	328	13,348	Req	50	12	No	125FM	30 Rotating General	68011
Columbia Hospital of Richland County +^{1} 2020 Hampton St., Columbia 4	County	501	15,807	Req	30	12	No	150FM	18 Rotating General	68111
McLeod Infirmary +^{1} 121 W. Cheves St., Florence	NPCorp	209	8,869	Req	36	12	No	250PM	6 Rotating General	68211
Greenville General Hospital +$^{1-3}$ 100 Mallard St., Greenville	NPCorp	550	22,237	Req	37	12	No	250	24 Rotating General	68311
Orangeburg Regional Hospital + 550 Carolina Ave. N.E., Orangeburg	County	215	7,198	Req	21	12	No	200FM	4 Rotating General	68411
Spartanburg General Hospital +^{1} 855 N. Church St., Spartanburg	County	365	15,947	Req	51	12	No	150FM	19 Rotating General	68511
SOUTH DAKOTA—Hospitals, 3; Internships, 23										
McKennan Hospital $^{1-3}$-X79 800 E. 21st St., Sioux Falls	Church	224	7,948	Req	23	12	No	150FM	7 Rotating General	68611
Sioux Valley Hospital +$^{1-3}$-X79 1123 S. Euclid Ave., Sioux Falls	NPCorp	210	9,522	None	40	12	252	200FM	10 Rotating General	68711
Sacred Heart Hospital +$^{1-3}$-X79 W. 4th St., Yankton	Church	208	4,802	Req	44	12	253	225FM	6 Rotating General	68811
TENNESSEE—Hospitals, 14; Internships, 244										
Baroness Erlanger Hospital +$^{1-3-4}$ 261 Wiehl St., Chattanooga 3	CyCo	486	19,438	Req	37	12	254	300FM	14 Rotating General	68911
*Holston Valley Community Hospital $^{1-3}$ W. Ravine Rd., Kingsport	NPCorp	245	11,528	Req	41	12	No	375PM	8 Rotating General	.....
East Tennessee Baptist Hospital +$^{1-3}$ 135 Blount Ave., Knoxville 20	Church	267	11,998	Req	35	12	255	200FM	12 Rotating General	69011
Fort Sanders Presbyterian Hospital 1909 W. Clinch Ave., Knoxville 16	Church	175	8,554	None	27	12	...	250FM	8 Rotating General	69111
St. Mary's Memorial Hospital +^{3} Oak Hill Ave., Knoxville 17	Church	328	12,341	Req	34	12	No	225-300FM	12 Rotating General	69311
*University of Tennessee Memorial Research Center and Hospital +$^{1-4}$ Alcoa Hwy., Knoxville	State	276	7,374	Req	42	12	No	300FM	18 Rotating General	.....
Baptist Memorial Hospital +$^{1-3}$ 899 Madison Ave., Memphis 3	Church	857	34,873	Req	39	12	No	300PM	20 Rotating General	69411
*City of Memphis Hospitals +$^{1-3-4}$-X80 (John Gaston Hospital) 860 Madison Ave., Memphis 3	City	712	22,927	Req	57	12	No	125-150FM	48 Rotating General	.....

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Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
TENNESSEE—Continued										
Methodist Hospital + 1265 Union Ave., Memphis 4	Church	283	14,337	Req	58	12	No	300FM	12 Rotating General	[illegible]
*St. Joseph Hospital +1 261 Jackson Ave., Memphis 5	Church	280	13,485	Req	37	12	No	300FM	12 Rotating General	.....
Baptist Hospital +1-3 2000 Church St., Nashville 4	Church	320	16,378	Req	33	12	256	300FM	16 Rotating General	[illegible]
George W. Hubbard Hospital +1-3-4-X81 1005 18th Ave. N., Nashville 8	Church	197	5,376	Req	51	12	No	125FM	14 Rotating General	[illegible]
St. Thomas Hospital +1-3 2000 Hayes St., Nashville 4	Church	231	10,778	Req	28	12	257	300FM	12 Rotating General 4 Mixed (Med.-Surg.)	70111 70124
Vanderbilt University Hospital +1-3-X82 21st Ave., S. at Edgehill, Nashville 5	NPCorp	375	12,539	Req	61	12	No	35FM	12 Straight Medicine 12 Straight Surgery 7 Straight Pediatrics 3 Straight Pathology	70232 70233 70234 70236
TEXAS—Hospitals, 23; Internships, 357										
Brackenridge Hospital +1-x84 15th and East Ave., Austin 1	City	258	9,930	Req	41	12	No	150FM	14 Rotating General	70411
Memorial Hospital 1 2606 Hospital Blvd., Corpus Christi	CyCo	270	12,468	Req	37	12	257	125FM	7 Rotating General	70511
Baylor University Hospital +1-3-x83 3500 Gaston Ave., Dallas 10	Church	610	30,010	Req	39	12	258	140FM	18 Rotating General 1 Straight Medicine 1 Straight Surgery	70611 70632 70633
Children's Medical Center +1-3-4-X83 2306 Welborn St., Dallas 19	NPCorp	127	4,358	Req	69	12	259	125FM	4 Straight Pediatrics	95534
Methodist Hospital +1-3-x83 301 W. Colorado Blvd., Dallas 22	Church	288	17,507	Req	48	12	No	175FM	16 Rotating General	70711
Parkland Memorial Hospital +1-4-X83 5201 Harry Hines Blvd., Dallas 19	Dist	819	18,356	Req	50	12	No	125PM	24 Rotating General 8 Straight Medicine	70811 70832
St. Paul's Hospital +1-3x83 3121 Bryan St., Dallas 4	Church	395	18,049	Req	51	12	No	125FM	14 Rotating General 2 Rot. (Med. Major) 1 Rot. (Surg. Major)	70911 70912 70913
Veterans Administration Hospital +1-3-X83 4500 S. Lancaster Rd., Dallas 16	Fed	410	5,011	Req	83	12	239	...	16 Straight Medicine	85732
Hotel Dieu, Sisters' Hospital +3 1014 N. Stanton St., El Paso	Church	234	11,452	Req	49	12	No	150FM	8 Rotating General	95411
R. E. Thomason General Hospital 1-3 4815 Alameda Ave., El Paso	CyCo	240	4,500	Req	73	12	No	200FM	8 Rotating General	71011
Harris Hospital +1 1300 W. Cannon St., Fort Worth 4	Church	394	20,440	Req	35	12	260	200FM	12 Rotating General	71211
John Peter Smith Hospital 1-3-4 1500 S. Main St., Fort Worth 4	CyCo	200	5,514	Req*	40	12	No	175PM	13 Rotating General	71111
St. Joseph's Hospital +1 1401 S. Main St., Fort Worth 4	Church	298	14,874	Req	37	12	No	200FM	12 Rotating General	71311
University of Texas Medical Branch Hospitals +1-3-X84 8th and Mechanic St., Galveston	State	900	14,312	Req	75	12	No	110FM	36 Rotating General 3 Straight Pathology	71411 71436
Baylor University College of Medicine Hospitals, Houston										
Jefferson Davis Hospital +1-3-4-X85 1801 Buffalo Dr., Houston 3	CyCo	484	14,683	Req	42	12	261	55FM	30 Rotating General 4 Straight Medicine 4 Straight Surgery 4 Straight Pediatrics	71611 71632 71633 71634
Methodist Hospital +1-3-X85 6516 Bertner Ave., Houston 25	Church	301	14,537	Req	71	12	262	195FM	8 Rotating General 2 Straight Medicine 2 Straight Surgery	71711 71732 71733
Hermann Hospital +1-X85 1203 Ross Sterling Ave., Houston 25	NPCorp	665	28,647	Req	56	12	No	100FM	18 Rotating General	71511
Memorial Hospital +1-3 602 Lamar Ave., Houston 2	Church	446	20,274	Req	40	12	No	195PM	8 Rotating General	96811
St. Joseph's Hospital +3 1910 Crawford St., Houston 3	Church	430	22,078	Req	55	12	No	150PM	6 Rotating General	71911
Robert B. Green Memorial Hospital +1-3-4-x84 515 Morales St., San Antonio 7	Dist	280	9,362	Req	57	12	No	150FM	29 Rotating General	72211
Santa Rosa Hospital +1-3 745 W. Houston St., San Antonio 7	Church	409	17,268	Req	46	12	No	150FM	12 Rotating General	72311
Scott and White Memorial Hospitals +1-3 213 W. Avenue G., Temple	NPCorp	201	7,756	Req	59	12	No	200FM	8 Rotating General	72511
Providence Hospital 1-3 1725 Colcord Ave., Waco	Church	200	7,688	Req	40	12	No	150FM	4 Rotating General	88511
UTAH—Hospitals, 7; Internships, 105										
St. Benedict's Hospital +1-3 3000 Polk Ave., Ogden	Church	175	6,919	Req	63	12	No	275PM	10 Rotating General	72711
Thomas D. Dee Memorial Hospital +-1-x86 2440 Harrison Blvd., Ogden	Church	226	10,452	Req	68	12	263	275PM	12 Rotating General	72811
Dr. W. H. Groves Latter-Day Saints Hospital +1 325 8th Ave., Salt Lake City 3	Church	539	20,107	Req	45	12	No	250FM	20 Rotating General	72911
Holy Cross Hospital +1-3-x86 1045 East First South St., Salt Lake City 2	Church	198	10,017	Req	53	12	263	150FM	6 Rotating General	73011
St. Mark's Hospital +1-x86 803 N. Second West St., Salt Lake City 16	Church	250	10,603	Req	43	12-24	No	250PM	4 Rot. Gen. (12 Mo.) 8 Rot. Gen. (24 mo.)	73111 73115

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Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
UTAH—Continued										
University of Utah Affiliated Hospitals Salt Lake County General Hospital +^{1}-X86 2033 S. State St., Salt Lake City 15	County	326	4,186	Req	67	12	No	200PM	18 Rotating General 9 Straight Medicine 4 Straight Surgery 4 Straight Pediatrics	73211 73232 73233 73234
Veterans Administration Hospital +^{1}-X86 Fort Douglas Station, Salt Lake City 13	Fed	710	2,811	Req	83	12	No	...		
VERMONT—Hospitals, 2; Interships, 21										
DeGoesbriand Memorial Hospital +$^{1-3}$X87 1 S. Prospect St., Burlington	Church	182	7,683	Req	56	12	No	100FM	9 Rotating General	73411
Mary Fletcher Hospital +$^{1-3-4}$-X87 Colchester Ave., Burlington	NPCorp	231	8,187	Req	68	12	No	75FM	12 Rotating General	73511
VIRGINIA—Hospitals, 18; Internships, 236										
Alexandria Hospital +$^{1-3}$ 709 Duke St., Alexandria	NPCorp	201	11,129	Req	47	12	No	175PM	8 Rotating General	73611
University of Virginia Hospital +^{1}-X88 Charlottesville	State	500	15,524	Req	50	12	264	50FM	12 Rotating General 12 Straight Medicine 8 Straight Surgery 2 Mixed (Med.-Surg.)	73711 73732 73733 73724
Chesapeake and Ohio Hospital +$^{1-3}$ Ridgeway St., Clifton Forge	NPCorp	210	7,401	Req	18	12	No	175FM	1 Straight Medicine	89232
Memorial Hospital +^{1} 142 S. Main St., Danville	NPCorp	275	11,384	Req	39	12	No	250FM	10 Rotating General	89311
Mary Immaculate Hospital ^{3} Blair and Buxton Ave., Newport News	Church	150	6,634	None	30	12	No	150FM	5 Rotating General	89411
Riverside Hospital +$^{1-3}$ 245 50th St., Newport News	NPCorp	218	9,665	Req	41	12	No	200FM	10 Rotating General	73911
De Paul Hospital +$^{1-3}$ Kingsley Lane and Granby St., Norfolk 5	Church	306	15,002	Req	58	12	No	150FM	12 Rotating General	74011
Norfolk General Hospital +$^{1-3}$ Raleigh and Colley Aves., Norfolk 7	NPCorp	495	13,916	Req	37	12	265	100FM	16 Rotating General 1 Rot. (Med. Major) 1 Rot. (Surg. Major) 1 Rot. (Ped. Major) 1 Rot. (Ob.-Gyn. Major)	74111 74112 74113 74114 74115
Petersburg General Hospital $^{1-3}$ Mt. Erin and Adams Sts., Petersburg	NPCorp	288	11,589	Req	33	12	No	200FM	10 Rotating General	99611
Maryview Hospital $^{1-3}$ 200 County Rd., Portsmouth	Church	210	6,412	None	34	12	No	300PM	8 Rotating General	99711
Johnston-Willis Hospital +$^{1-3}$ 2908 Kensington Ave., Richmond 21	Corp	235	7,843	Req	45	12	267	200FM	12 Rotating General	74211
Medical College of Virginia Hospital Division +$^{1-3-4}$-X89 (Memorial, Dooley, and St. Philips Hospitals) 1200 E. Broad St., Richmond 19	State	1,168	25,993	Req	46	12	No	75FM	40 Rotating General 6 Straight Medicine 8 Straight Surgery 2 Straight Pathology	74311 74232 74333 74336
Richmond Memorial Hospital +$^{1-3}$ 1300 Westwood Ave., Richmond 27	NPCorp	290	10,692	Req	39	12	No	250FM	12 Rotating General	99811
Stuart Circle Hospital $^{1-3}$ 415 Stuart Circle, Richmond 20	Corp	150	4,715	Req	49	12	268	250FM	8 Rotating General	74411
Jefferson Hospital +$^{1-3}$ 1313 Franklin Rd. S.W., Roanoke 16	NPCorp	151	6,012	Req	45	12	No	150FM	6 Mixed (Surg.-Med.-Ob.)	74669
Lewis Gale Hospital +$^{1-3}$ 3rd St. and Luck Ave. S. W., Roanoke 11	Corp	180	6,290	Req	35	12	No	275FM	6 Rotating General	74711
Roanoke Memorial Hospital +$^{1-3}$ Belleview and Lake Aves., Roanoke 14	NPCorp	325	12,030	Req	52	12	No	250-300FM	12 Rotating General	74811
Winchester Memorial Hospital $^{1-3}$ S. Stewart St., Winchester	NPCorp	254	10,509	Req	48	12	No	250FM	6 Rotating General	74911
WASHINGTON—Hospitals, 14; Internships, 179										
Children's Orthopedic Hospital +$^{1-3}$-x90 4800 Sand Point Way, Seattle 5	NPCorp	181	6,708	Req	94	12	269	175PM	6 Straight Pediatrics	99031
Doctors Hospital +$^{1-3}$-x90 909 University St., Seattle 1	NPCorp	187	10,042	Req	50	12	270	200FM	8 Rotating General	75111
King County Hospital +$^{1-4}$-X90 Unit No. 1. (Harborview.) 325 9th Ave., Seattle 4	County	450	11,020	Req	71	12	No	100FM	36 Rotating General	75211
Providence Hospital +-x90 17th and E. Jefferson St., Seattle 22	Church	316	15,674	Req	59	12	No	250FM	16 Rotating General	75311
Seattle General Hospital $^{1-3}$ 5th Ave. and Marion St., Seattle 4	NPCorp	85	3,988	Req	37	12	270	150FM	5 Rotating General	75411
Swedish Hospital +$^{1-3}$-x90 1212 Columbia St., Seattle 4	NPCorp	372	18,036	Req	56	12	270	200PM	16 Rotating General	75511
University Hospital +$^{1-3}$ 1957 Pacific, Seattle 5	State	320	....	Req	..	12	No	130PM	7 Rotating General 7 Mixed (Med. Major) 4 Mixed (Surg. Major) 3 Mixed (Ped. Major) 3 Mixed (Ob.-Gyn. Major)	91811 91812 91813 91831 91835
Virginia Mason Hospital +$^{1-3}$-x80 1111 Terry Ave., Seattle 1	NPCorp	211	10,910	Req	79	12	270	125-225FM	10 Rotating General	75611

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Name of Hospital and Location	Control	Total Beds	Number of Patients Admitted	Outpatient Service	Autopsy Percentage	Length of Program (Months)	Affiliated Service	Beginning Stipend (Month)	Number and Type of Internships	Code Number
WASHINGTON—Continued										
Deaconess Hospital $^{+1-3}$ 733 W. 4th Ave., Spokane 4	Church	252	13,742	None	48	12	No	200-250FM	12 Rotating General	75711
Sacred Heart Hospital $^{+3}$ 101 8th Ave., Spokane 4	Church	534	24,165	Req	43	12	No	200-250FM	15 Rotating General	75811
St. Luke's Hospital $^{+1-3}$ 830 N. Summit Blvd., Spokane 11	NPCorp	240	7,825	Req	43	12	272	200FM	4 Rotating General	75911
Pierce County Hospital $^{1-4}$ 3582 Pacific Ave., Tacoma 8	County	205	5,266	Req	32	12	No	215FM	11 Rotating General	76011
St. Joseph Hospital $^{+1-3}$ 1812 S. Eye St., Tacoma 1	Church	219	9,835	Req	34	12	No	230FM	6 Rotating General	76111
Tacoma General Hospital $^{+1-3}$ 315 South K St., Tacoma 5	NPCorp	218	10,771	None	40	12	273	150FM	10 Rotating General	76211
WEST VIRGINIA—Hospitals, 10; Internships, 90										
Charleston General Hospital $^{+1-3}$ Brooks St. and Elmwood Ave., Charleston 25	NPCorp	240	9,320	Req	48	12	No	200FM	11 Rotating General	76411
Kanawha Valley Hospital $^{+1-3}$ 1014 Virginia St. E., Charleston 1	Corp	151	5,138	Req	35	12	No	190FM	6 Rotating General	76511
Memorial Hospital $^{+1-3}$ 3200 Noyes Ave., SE., Charleston 3	NPCorp	289	10,861	Req	45	12	No	200FM	10 Rotating General	90211
Cabell Huntington Hospital $^{+1-3}$ 1340 16th St., Huntington 3	NPCorp	218	8,447	Req	39	12	No	225FM	8 Rotating General	97611
St. Mary's Hospital $^{+1-3}$ 2900 1st Ave , Huntington 2	Church	275	11,910	Req	31	12	274	200-250FM	14 Rotating General	76611
Camden-Clark Memorial Hospital $^{1-3}$ 717 Ann St., Parkersburg	City	194	8,277	Req	26	12	No	150FM	4 Rotating General	76711
St. Joseph's Hospital $^{+1-3}$ 1801 Market St., Parkersburg	Church	195	9,081	Req	29	12	No	150FM	6 Rotating General	94411
Weirton General Hospital $^{1-3}$ Weirton	NPCorp	175	7,095	Req	25	12	275	250FM	6 Rotating General	90111
Ohio Valley General Hospital $^{+1-3}$ 2000 Eoff St., Wheeling	NPCorp	275	9,921	Req	48	12	No	250FM	15 Rotating General	76911
Wheeling Hospital $^{1-3-4}$ 109 Main St., Wheeling	Church	231	8,462	Req	24	12	No	250FM	10 Rotating General	77011
WISCONSIN—Hospitals, 22; Internships, 233										
Luther Hospital $^{1-3}$ 310 Chestnut St., Eau Claire	NPCorp	224	9,275	Req	49	12	No	250FM	6 Rotating General	77111
St. Agnes Hospital $^{+1-3}$ 430 E. Division St., Fond du Lac	Church	350	10,348	None	40	12	No	200FM	6 Rotating General	98311
Mercy Hospital $^{+1-3}$ 566 N. Washington St., Janesville	Church	221	6,804	Req	26	12	No	150FM	5 Rotating General	77311
La Crosse Lutheran Hospital $^{+1-3}$ 1910 South Ave., La Crosse	Church	200	8,320	Req	43	12	No	250FM	6 Rotating General	77411
St. Francis Hospital $^{+3}$ 709 S. 10th St., La Crosse	Church	250	10,213	Req	36	12	No	200FM	8 Rotating General	77511
Madison General Hospital $^{+1-3}$ 925 Mound St., Madison 5	NPCorp	349	12,085	None	52	12	No	150-235FM	14 Rotating General	77611
Methodist Hospital $^{+1-3}$-x91 309 W. Washington Ave., Madison 3	Church	149	4,790	Req	49	12	No	150-200FM	5 Rotating General	77711
St. Mary's Hospital $^{+1-3}$x91 720 S. Brooks St., Madison 5	Church	272	10,776	None	49	12	No	165-250FM	10 Rotating General	77811
University Hospitals $^{+1-3}$-X91 1300 University Ave., Madison 6	State	724	14,576	Req	78	12	No	75FM	4 Straight Pediatrics 12 Mixed (Med.-Surg.) 6 Mixed (Surg.-Med.)	77934 77983 77984
St. Joseph's Hospital $^{+1}$ 611 St. Joseph's Ave., Marshfield	Church	270	9,213	Req	44	12	No	250FM	7 Rotating General	78011
Columbia Hospital $^{+1-3}$ 3321 N. Maryland Ave., Milwaukee 11	NPCorp	263	8,037	Req	67	12	287	245PM	10 Rotating General	78111
Evangelical Deaconess Hospital $^{+1-3}$ 620 N. 19th St., Milwaukee 3	Church	263	12,343	Req	47	12	276	200FM	11 Rotating General	78211
*Milwaukee Children's Hospital $^{+1-3-4}$-X92 721 N. 17th St., Milwaukee 3	NPCorp	160	6,566	Req	91	12	287	245PM	2 Straight Pediatrics	.....
Milwaukee County Hospital $^{+1-3-4}$-X92 8700 W. Wisconsin Ave., Milwaukee 13	County	600	14,494	Req	30	12	No	151PM	36 Rotating General	78411
Milwaukee Hospital $^{+1-3}$-x92 2200 W. Kilbourn Ave., Milwaukee 3	Church	341	11,352	Req	36	12	277	245PM	12 Rotating General	78511
Misericordia Hospital $^{1-3}$ 1255 N. 22nd St., Milwaukee 3	Church	177	7,404	None	49	12	278	275PM	6 Rotating General	89711
Mount Sinai Hospital $^{+1-3}$ 948 N. 12th St., Milwaukee 3	NPCorp	292	10,710	Req	34	12	279	200FM	14 Rotating General	78711
St. Joseph's Hospital $^{+1-3}$-x92 5000 W. Chambers St., Milwaukee 10	Church	354	15,605	Req	46	12	280	245PM	12 Rotating General	78811
St. Luke's Hospital $^{+1-3}$ 2900 W. Oklahoma Ave., Milwaukee 15	NPCorp	263	9,697	Req	50	12	276	250PM	10 Rotating General	78911
St. Mary's Hospital $^{+1-3}$ 2320 N. Lake Dr., Milwaukee 11	Church	335	7,444	Req	60	12	278	175FM	16 Rotating General	79011
St. Michael Hospital $^{+3}$ 2400 W. Villard Ave., Milwaukee 9	Church	250	8,968	Req	42	12	No	200FM	8 Rotating General	79111
St. Mary's Hospital $^{1-3}$ Maple Hill, Wausau	Church	220	8,592	Req	41	12	No	150FM	4 Rotating General	79311

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HOSPITALS APPROVED FOR JUNIOR ROTATING INTERNSHIPS IN THE DOMINION OF CANADA

The following list of hospitals that conform to the standards of The Canadian Medical Association is published for the information of graduates interested in an internship appointment in a Canadian hospital. Hospitals that are approved as conforming to the standards of The Canadian Medical Association may be considered as offering internships equivalent in educational value to those in hospitals approved for intern training by the Council.

This list, revised to July 1, 1959, was furnished by The Canadian Medical Association.

Name of Hospital	Location
Royal Columbian Hosp.	New Westminster, B. C.
St. Paul's Hospital	Vancouver, B. C.
St. Vincent's Hospital	Vancouver, B. C.
Vancouver General Hospital	Vancouver, B. C.
Royal Jubilee Hospital	Victoria, B. C.
St. Joseph's Hospital	Victoria, B. C.
Calgary General Hospital	Calgary, Alta.
Holy Cross Hospital	Calgary, Alta.
Edmonton Ge	
Misericordia I	
Royal Alexan	
University of	
Moose Jaw Union Hospital	Moose Jaw, Sask.
Regina Gen	
Regina Gre	
St. Paul's I	
Saskatoon City Hospital	Saskatoon, Sask.
	Sask.
	Man.
	Man.
	Man.
	Man.
	Ont.
St. Joseph's Hospital	Hamilton, Ont.
Hotel-Dieu Hospital	Kingston, Ont.
Kingston General Hospital	Kingston, Ont.
	Ont.
	Ont.
	Ont.
	Ont.
Ottawa General Hospital	Ottawa, Ont.
Hop. St. Louis-Marie de Montfort	Ottawa, Ont.
Gen. Hosp. of Port Arthur	Port Arthur, Ont.
St. Joseph's General Hosp.	Port Arthur, Ont.
St Catharines Gen. Hosp.	St. Catharines, Ont.
St. Joseph's Hospital	Sarnia, Ont.
Sarnia General Hospital	Sarnia, Ont.
Scarborough Gen. Hosp.	Scarborough, Ont.
New Mount Sinai Hospital	Toronto, Ont.
St. Joseph's Hospital	Toronto, Ont.
St. Michael's Hospital	Toronto, Ont.
Toronto E. Gen. & Ortho. Hosp.	Toronto, Ont.
Toronto General Hospital	Toronto, Ont.
Toronto Western Hospital	Toronto, Ont.
Women's College Hospital	Toronto, Ont.
Grace Hospital	Windsor, Ont.
Hotel-Dieu of St. Joseph	Windsor, Ont.
Metropolitan General Hospital	Windsor, Ont.
Hotel-Dieu Saint-Vallier	Chicoutimi, Que.
Hopital St. Luc	Montreal, Que.
Hotel-Dieu de Montreal	Montreal, Que.
Jewish General Hospital	Montreal, Que.
Maisonneuve Hospital	Montreal, Que.
Montreal General Hospital	Montreal, Que.
Notre-Dame Hospital	Montreal, Que.
Queen Elizabeth Hospital	Montreal, Que.
Royal Victoria Hospital	Montreal, Que.
Reddy Mem. Hosp. (Westmount)	Montreal, Que.
St. Mary's Hospital	Montreal, Que.
Hopital de l'Enfant-Jesus	Quebec, Que.
Hopital du Saint-Sacrement	Quebec, Que.
Hopital St. Francois d'Assise	Quebec, Que.
Hotel-Dieu de Quebec	Quebec, Que.
Jeffery Hale's Hospital	Quebec, Que.
Hop. Gen. St. Vin. de Paul	Sherbrooke, Que.
Hotel-Dieu de Sherbrooke	Sherbrooke, Que.
Sherbrooke Hospital	Sherbrooke, Que.
Hopital St. Joseph	Trois Rivieres, Que.
Hopital General de Verdun	Verdun, Que.
Victoria	
Moncton	
Saint Jo	
Halifax	
Victoria	
St. John	

ABBREVIATIONS AND NOTES

1. Appointments available to women applicants
2. Appointments restricted to women applicants
3. Appointments available to graduates of foreign medical schools. Details regarding requirements for appointment can be secured from the hospitals concerned.
4. Dental internships available
5. Available to citizens of the United States only

+ The plus sign indicates additional approval for residencies in specialties, as shown in the Council's list of Approved Residencies.

CyCo	City and County
Corp	Corporation unrestricted as to profit
Dist	Hospital District
NPCorp	Nonprofit corporation
Part	Partnership
Req	Required
FM	Full maintenance
PM	Partial maintenance

Medical School Affiliations

Footnotes 10 to 92 refer to medical schools affiliated with hospitals for undergraduate clinical clerkships.

Hospitals have been identified with symbol **X** when a medical school has indicated that the hospital is a major unit in the school's teaching program. Hospitals have been identified with symbol **x** when a medical school has indicated that the hospital is used to a limited extent in the school's teaching program.

10. Medical College of … labama
11. University of Arka … Little Rock, Ark.
12. College of Medical … , Los Angeles
13. University of Calif … Los Angeles
14. University of Sout … Medicine, Los Angeles
15. Stanford University School of Medicine, San Francisco
16. University of California School of Medicine, San Francisco
17. University of Colorado School of Medicine, Denver
18. Yale University School of Medicine, New Haven, Conn.
19. Georgetown University School of Medicine, Washington, D. C.
20. George Washington University School of Medicine, Washington, D. C.
21. Howard University School of Medicine, Washington, D. C.
22. University of Florida College of Medicine, Gainesville, Fla.
23. University of Miami School of Medicine, Coral Gables, Fla.
24. Emory University School of Medicine, Atlanta (Emory University), Ga.
25. Medical College of Georgia, Augusta, Ga.
26. Chicago Medical School, Chicago
27. Northwestern University Medical School, Chicago
28. Stritch School of Medicine of Loyola University, Chicago
29. University of Chicago, The School of Medicine, Chicago
30. University of Illinois College of Medicine, Chicago
31. Indiana University School of Medicine, Bloomington, Indianapolis, Ind.
32. State University of Iowa College of Medicine, Iowa City
33. University of Kansas School of Medicine, Lawrence-Kansas City, Kan.
34. University of Louisville School of Medicine, Louisville, Ky.
35. Louisiana State University School of Medicine, New Orleans, La.
36. Tulane University School of Medicine, New Orleans, La.
37. Johns Hopkins University School of Medicine, Baltimore
38. University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore
39. Boston University School of Medicine, Boston
40. Harvard Medical School, Boston
41. … Medicine, Boston
42. … al School, Ann Arbor, Mich.
43. … ge of Medicine, Detroit, Mich.
44. … ical School, Minneapolis
45. … ool of Medicine, Jackson
46. … of Medicine, Columbia, Mo.
47. St. Louis University School of Medicine, St. Louis
48. … of Medicine, St. Louis
49. … Medicine, Omaha, Nebr.
50. … of Medicine, Omaha, Nebr.
51. … anover, N. H.
52. … , Jersey City, N. J.
53. Albany Medical College of Union University, Albany, N. Y.
54. University of Buffalo School of Medicine, Buffalo, N. Y.
55. Albert Einstein College of Medicine of Yeshiva University, New York City
56. Columbia University College of Physicians and Surgeons, New York City
57. Cornell University Medical College, New York City
58. New York Medical College, Flower and Fifth Avenue Hospitals, New York City
59. New York University College of Medicine, New York City
60. State University of New York, Downstate Medical Center, New York City
61. State University of New York, Upstate Medical Center, Syracuse, N. Y.
62. University of Rochester School of Medicine and Dentistry, Rochester, N. Y.
63. University of North Carolina School of Medicine, Chapel Hill, N. C.
64. Duke University School of Medicine, Durham, N. C.
65. Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.
66. University of Cincinnati College of Medicine, Cincinnati
67. Western Reserve University School of Medicine, Cleveland
68. Ohio State University College of Medicine, Columbus
69. University of Oklahoma School of Medicine, Oklahoma City
70. University of Oregon Medical School, Portland
71. … e and Hospital, Philadelphia
72. … Philadelphia
73. … of Medicine, Philadelphia
74. … School of Medicine, Philadelphia
75. … f Pennsylvania, Philadelphia
76. … hool of Medicine, Pittsburgh
77. University of Puerto Rico School of Medicine, San Juan
78. Medical College of South Carolina, Charleston
79. State University of South Dakota School of Medicine, Vermillion
80. University of Tennessee College of Medicine, Memphis
81. Meharry Medical College, Nashville, Tenn.
82. Vanderbilt University School of Medicine, Nashville, Tenn.
83. University of Texas Southwestern Medical School, Dallas, Texas
84. University of Texas Medical Branch, Galveston, Texas
85. Baylor University College of Medicine, Houston, Texas
86. University of Utah School of Medicine, Salt Lake City
87. University of Vermont College of Medicine, Burlington, Vt.
88. University of Virginia School of Medicine, Charlottesville, Va.
89. Medical College of Virginia, Richmond
90. University of …
91. University of … ttle
92. Marquette Un … Wis. … kee, Wis.

Affiliations as Referred to in Column Headed: "Affiliated Service"

100. Childre…
101. Childre… and Hospital, Veterans … Ala.
102. Maricop… riz.
103. Pima County General Hospital, Tucson, Ariz.
104. Arkansas Children's Hospital, Little Rock, Ark.
105. Veterans Administration Hospital, Little Rock, Ark.
106. Highland-Alameda County Hospital, Oakland, Calif.

107. Los Angeles County Hospital, Los Angeles, Calif.
108. Santa Monica Hospital, Santa Monica, Calif.
109. Children's Hospital, Los Angeles, Calif.
110. Children's Hospital, Santa Marta Maternity Hospital, Los Angeles, Calif.
111. Los Angeles County Hospital, University of California Hospital, Los Angeles; Harbor General Hospital, Torrance, Calif.
112. Fairmont Hospital of Alameda County, San Leandro, Calif.
113. City of Hope Medical Center, Duarte, Calif.
114. Los Angeles County Hospital, Los Angeles, Calif.
115. Laguna Honda Home, San Francisco, Calif.
116. Children's Hospital, Mary's Help Hospital, San Francisco, Calif.; Southern Pacific Hospital and Sanatorium, Tucson, Ariz.
117. Children's Hospital, San Francisco, Calif.
118. Children's Hospital, St. Luke's Hospital, San Francisco, Calif.
119. Santa Barbara General Hospital, Santa Barbara, Calif.
120. California Hospital, Los Angeles, Calif.
121. Emory John Brady Hospital, Colorado Springs, Colo.
122. University of Colorado Medical Center, Children's Hospital, Denver, Colo.
123. Children's Hospital, Denver General Hospital, Denver, Colo.
124. Children's Hospital, Colorado General Hospital, Denver, Colo.
125. Children's Hospital, Denver, Colo.
126. Hospital of St. Raphael, New Haven, Conn.
127. Yale-New Haven Medical Center, New Haven, Conn.
128. Hartford Hospital, Hartford, Conn.
129. Southbury Training School, Southbury, Conn.; Veterans Administration Hospital, West Haven, Conn.
130. Children's Hospital, Washington, D. C.
131. Arlington Hospital, Arlington, Va.
132. District of Columbia General Hospital, Washington, D. C.
133. DeWitt Army Hospital, Ft. Belvoir, Va.
134. Duval Medical Center, Jacksonville, Fla.
135. Variety Children's Hospital, Miami, Fla.
136. Escambia General Hospital, Our Lady of Angels Hospital, Pensacola, Fla.
137. Clara Frye Memorial Hospital, Tampa, Fla.
138. Grady Memorial Hospital, Atlanta, Ga.
139. Mercy Free Dispensary, Chicago, Ill.
140. Children's Memorial Hospital, Chicago, Ill.
141. Cook County Hospital, Frank Cuneo Memorial Hospital, Chicago, Ill.
142. Illinois Industrial Home and Services for the Blind, Chicago, Ill.
143. Mercy Hospital, Chicago, Ill.
144. Illinois Masonic Hospital, Chicago, Ill.
145. Marion County General Hospital, Indianapolis, Ind.
146. Northern Indiana Children's Hospital, South Bend, Ind.
147. Booth Memorial Hospital, Des Moines, Iowa
148. Broadlawns Polk County Hospital, Des Moines, Iowa
149. Children's Mercy Hospital, Kansas City, Mo.
150. Sedgwick County Hospital, Booth Memorial Hospital, Wichita, Kan.
151. Children's Hospital, Louisville, Ky.
152. Louisville General Hospital, Louisville, Ky.
153. St. Joseph Infirmary, Louisville, Ky.
154. Sara Mayo Hospital, New Orleans, La.
155. Charity Hospital of Louisiana, New Orleans, La.
156. Confederate Memorial Medical Center, Shreveport, La.
157. Johns Hopkins Hospital, Baltimore, Md.
158. University Hospital, Baltimore, Md.
159. Peninsula General Hospital, Salisbury, Md.
160. Baltimore City Hospital, Baltimore, Md.
161. Children's Hospital, District of Columbia General Hospital, Washington, D. C.
162. Boston State Hospital, Boston, Mass.
163. Children's Medical Center, Boston, Mass.
164. Mount Auburn Hospital, Cambridge, Mass.
165. St. Margaret's Hospital, Boston, Mass.
166. Boston City Hospital, Boston; Veterans Administration Hospital, Providence, R. I.
167. Maine Medical Center, Portland, Maine; Boston Floating Hospital, Boston; Burbank Hospital, Fitchburg, Mass.
168. Boston Floating Hospital, Boston
169. Robert Breck Brigham Hospital, Boston
170. Boston City Hospital, St. Margaret's Hospital, Boston
171. [illegible] Attleboro, Mass.; Fall River General [illegible] ass.
172. [illegible] Gloucester, Mass.
173. Wesson Maternity Hospital, Springfield, Mass.
174. St. Joseph's Mercy Hospital, Ann Arbor, Mich.; Mercy Hospital, Benton Harbor, Mich.; McLaren General Hospital, Flint, Mich.; St. Mary's Hospital, Grand Rapids, Mich.; Midland Hospital, Midland, Mich.; Saginaw General Hospital, Saginaw, Mich.; Beyer Memorial Hospital, Ypsilanti, Mich.
175. Herman Kiefer Hospital, Detroit; Wayne County General Hospital and Infirmary, Eloise, Mich.
176. Children's Hospital, Lafayette Clinic, Receiving Hospital, Detroit
177. Children's Hospital, Receiving Hospital, Detroit
178. University Hospital, Ann Arbor, Mich.
179. St. Joseph's Retreat, Dearborn, Mich.; Herman Kiefer Hospital, Detroit; Wayne County General Hospital and Infirmary, Eloise, Mich.
180. Herman Kiefer Hospital, Detroit
181. Children's Hospital, Detroit
182. Genesee County Tuberculosis Sanatorium, Hurley Hospital, Flint, Mich.
183. Evangeline Home and Hospital, Mary Free Bed Convalescent Home, Michigan Veterans' Facility Hospital, Grand Rapids, Mich.
184. Ferguson-Droste-Ferguson Hospital, Grand Rapids, Mich.
185. Children's Hospital, Herman Kiefer Hospital, Receiving Hospital, Detroit; Wayne County General Hospital and Infirmary, Eloise, Mich.
186. Miller Memorial Hospital, Duluth, Minn.
187. Anoka State Hospital, Anoka, Minn.; Children's Hospital, St. Paul, Minn.
188. Children's Hospital, Gillette State Hospital for Crippled Children, St. Paul, Minn.
189. Children's Hospital, St. Paul, Minn.
190. Children's Mercy Hospital, Kansas City, Mo.
191. County Welfare Clinic, St. Joseph, Mo.
192. St. Louis City Hospital, St. Louis
193. St. Louis County Hospital, Clayton, Mo.; St. Louis Maternity Hospital, St. Louis; Burge Hospital, Springfield, Mo.
194. St. Louis Children's Hospital, St. Louis
195. Montana State Hospital, Warm Springs, Mont.
196. Douglas County Hospital, Omaha, Nebr.
197. Children's Memorial Hospital, Omaha, Nebr.
198. St. Elizabeth Hospital, Elizabeth, N. J.; St. Peter's General Hospital, New Brunswick, N. J.
199. Margaret Hague Maternity Hospital, Jersey City, N. J.
200. Babies Hospital, Newark, N. J.
201. Roosevelt Hospital, New York City
202. Passaic General Hospital, Passaic, N. J.; Nathan and Miriam Barnert Memorial Hospital, Paterson, N. J.; Perth Amboy General Hospital, Perth Amboy, N. J.
203. Montefiore Hospital, New York City
204. Porter Sanitarium and Hospital. Presbyterian Hospital, St. Joseph's Hospital, St. Luke's Hospital, Denver, Colo.
205. A. N. Brady Hospital, Albany, N. Y.
206. Children's Hospital, Buffalo, N. Y.
207. [illegible] Hospital, Washington, D. C.
209. [illegible] Brooklyn
211. Mount Sinai Hospital, Abraham Jacobi Hospital, New York City
212. Jewish Hospital, Brooklyn
213. Hunterdon Medical Center, Flemington, N. J.
214. Hudson River State Hospital, Poughkeepsie, N. Y.
215. Strong Memorial Hospital, Rochester, N. Y.
216. Homer Folks Tuberculosis Hospital, Oneonta, N. Y.
217. Children's Hospital, Columbus, Ohio
218. Columbus Psychiatric Institute and Hospital, Children's Hospital, Ohio Tuberculosis Hospital, Columbus, Ohio
219. Fort Hamilton Hospital, Hamilton, Ohio
220. St. Vincent Charity Hospital, Cleveland, Ohio
221. Children's Hospital, Toledo, Ohio
222. Maumee Valley Hospital, Toledo State and Receiving Hospitals, William Roche Memorial Hospital, Toledo, Ohio
223. University of Oklahoma Hospitals, Oklahoma City
224. St. Vincent's Hospital, Portland, Ore.
225. Providence Hospital, University of Oregon Medical School Hospitals and Clinics, Portland, Ore.
226. Children's Hospital, Akron, Ohio
227. Children's Hospital, Cincinnati
228. St. Ann's Hospital, Cleveland Ohio
229. Staten Island Hospital, St. Vincent's Hospital, Staten Island, N. Y.
230. Gravely Sanatorium, Chapel Hill, N. C.
231. U. S. Army Hospital, Fort Dix, N. J.
232. Children's Hospital, Summit County Receiving Hospital, Akron, Ohio
233. Daniel Drake Memorial Hospital, Dunham Hospital, Cincinnati
234. Cleveland Metropolitan General Hospital, St. Alexis Hospital, Cleveland
235. Lima State Hospital, Lima, Ohio
236. Veterans Administration Hospital, Oklahoma City, Okla.
237. University of Oklahoma Hospitals, Oklahoma City, Okla.
238. Hospital of the University of Pennsylvania, Philadelphia
239. Children's Medical Center, Parkland Memorial Hospital, Dallas, Texas
240. Stanford University Hospitals, San Francisco
241. Athens General Hospital, Athens, Ga.
242. Sedgwick County Hospital, Wichita, Kan.
243. Children's Hospital, Louisville, Ky.
244. Lincoln Hospital, New York City
245. Children's Hospital, Montefiore Hospital, Pittsburgh, Pa.
246. St. Francis Hospital, Pittsburgh, Pa.
247. Germantown Dispensary and Hospital, Philadelphia Psychiatric Hospital, Philadelphia, Pa.
248. St. Christopher's Hospital for Children, Philadelphia
249. Children's Hospital, Philadelphia
250. Providence Lying-In [illegible]
251. Our Lady of Fatima [illegible] R. I.
252. Veterans Administrati[illegible] D.
253. Yankton State Hospital, Yankton, S. D.
254. T. C. Thompson Children's Hospital, Chattanooga, Tenn.
255. University of Tennessee Memorial Research Center and Hospital, Knoxville, Tenn.
256. Nashville General Hospital, Vanderbilt University Hospital, Tennessee State Penitentiary Hospital, Nashville, Tenn.
257. Driscoll Foundation Children's Hospital, Corpus Christi, Texas
258. Children's Medical Center, Dallas, Texas
259. Parkland Memorial Hospital, Dallas, Texas
260. W. I. Cook Memorial Hospital Center for Children, Ft. Worth, Texas
261. Texas Children's Hospital, Houston, Texas
262. Jefferson Davis Hospital, St. Luke's Episcopal Hospital, Texas Children's Hospital, Houston, Texas
263. Salt Lake County General Hospital, Salt Lake City
264. Blue Ridge Sanatorium, Charlottesville, Va.; Lynchburg General Hospital, Lynchburg, Va.; King's Daughters' Hospital, Staunton, Va.
265. King's Daughters' Hospital, Staunton, Va.
266. DePaul Hospital, Norfolk, Va.; U. S. Naval Hospital, Portsmouth, Va.
267. Medical College of Virginia, Hospital Division, Tucker Hospital, Richmond, Va.
268. Medical College of Virginia, Hospital Division, Richmond, Va.
269. Madigan Army Hospital, Tacoma, Wash.
270. Children's Orthopedic Hospital, Seattle, Wash.
271. U. S. Army Hospital, Fort Lawton, Wash.; Fort Defiance Indian Hospital, Fort Defiance, Ariz.
272. Booth Memorial Hospital, Fairchild Air Force Base Hospital, Spokane, Wash.
273. Mary Bridge Children's Hospital, Tacoma, Wash.
274. Huntington State Hospital, Huntington, W. Va.
275. Ohio Valley General Hospital, Wheeling, W. Va.
276. Milwaukee Children's Hospital, Milwaukee Contagion Hospital, Milwaukee County Hospital, Milwaukee, Wis.

277. Milwaukee Children's Hospital, Martha Washington Home, Milwaukee, Wis.
278. Milwaukee Children's Hospital, Milwaukee, Wis.
279. Johnston Municipal Hospital, Milwaukee Children's Hospital, Milwaukee County Hospital, Milwaukee, Wis.
280. Milwaukee County Hospital, St. Michael Hospital, Milwaukee, Wis.
281. City and County Emergency Hospital, Maluhia Hospital, Honolulu
282. Kansas City General Hospital, University of Kansas Medical Center, Kansas City, Mo.
283. University Hospital, New York City
284. Children's Hospital, Elizabeth Steel Magee Hospital, Eye and Ear Hospital, Presbyterian Hospital, Woman's Hospital, Pittsburgh, Pa.
285. University of Nebr Nebr.
286. Philadelphia State Pa.
287. Milwaukee Hospital, Martha Washington Home, Milwaukee, Wis.

APPROVED INTERNSHIPS BY TYPE OF SERVICE

ROTATING GENERAL

Number of Approved Programs, 814

FEDERAL

UNITED STATES ARMY

Letterman Army Hospital	San Francisco
Fitzsimons Army Hospital	Denver
Walter Reed Army Hospital (Army Medical Center)	Washington, D. C.
U. S. Army Hospital	Fort Benning, Ga.
Tripler Army Hospital	Honolulu, Hawaii
U. S. Army Hospital	Fort Bragg, N. C.
Valley Forge Army Hospital	Phoenixville, Pa.
William Beaumont Army Hospital	El Paso, Texas
Brooke Army Hospital, Ft. Sam Houston	San Antonio, Texas
Madigan Army Hospital	Tacoma, Wash.

UNITED STATES AIR FORCE

U. S. Air Force Hospital	San Antonio, Texas

UNITED STATES NAVY

U. S. Naval Hospital	Oakland, Calif.
U. S. Naval Hospital	Oceanside, Calif.
U. S. Naval Hospital	San Diego, Calif.
U. S. Naval Hospital	Jacksonville, Fla.
U. S. Naval Hospital	Pensacola, Fla.
U. S. Naval Hospital	Great Lakes, Ill.
U. S. Naval Hospital	Bethesda, Md.
U. S. Naval	Mass.
U. S. Naval	N. Y.
U. S. Naval	Pa.
U. S. Naval	R. I.
U. S. Naval	S. C.
U. S. Naval	Va.
U. S. Naval Hospital	Bremerton, Wash.

UNITED STATES PUBLIC HEALTH SERVICE

U. S. Public Health Service Hospital	San Francisco
U. S. Public Health Service Hospital	New Orleans
U. S. Public Health Service Hospital	Baltimore
U. S. Public Health Service Hospital	Boston
U. S. Public Health Service Hospital	Staten Island, N. Y.
U. S. Public Health Service Hospital	Norfolk, Va.
U. S. Public Health Service Hospital	Seattle

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Freedmen's Hospital	Washington, D. C.
St. Elizabeths Hospital	Washington, D. C.

VETERANS ADMINISTRATION

Veterans Admin. Hospital	Los Angeles

OTHER FEDERAL

Gorgas Hospital	Balboa Heights, Canal Zone

NONFEDERAL

	Birmingham, Ala.
	Birmingham, Ala.
	Birmingham, Ala.
	Birmingham, Ala.
Lloyd Noland Hospital	Fairfield, Ala.
Holy Name of Jesus Hospital	Gadsden, Ala.
Mobile General Hospital	Mobile, Ala.
Druid City Hospital	Tuscaloosa, Ala.
Good Samaritan Hospital	Phoenix, Ariz.
	Phoenix, Ariz.
	Phoenix, Ariz.
	Tucson, Ariz.
Tucson Medical Center	Tucson, Ariz.
Arkansas Baptist Hospital	Little Rock, Ark.
St. Vincent Infirmary	Little Rock, Ark.
University Hospital	Little Rock, Ark.
General Hospital of Riverside County	Arlington, Calif.
Kern County General Hospital	Bakersfield, Calif.
Herrick	Berkeley, Calif.
General	Fresno, Calif.
Glendale	Glendale, Calif.
Loma Linda Sanitarium and Hospital	Loma Linda, Calif.
St. Mary's Long Beach Hospital	Long Beach, Calif.
Seaside Memorial Hospital	Long Beach, Calif.

NONFEDERAL—Continued

California	Los Angeles, Calif.
Cedars of	Los Angeles, Calif.
Hospital o	Los Angeles, Calif.
Los Angel	Los Angeles, Calif.
Presbyteri	Los Angeles, Calif.
Queen of Angels Hospital	Los Angeles, Calif.
St. Vincent's Hospital	Los Angeles, Calif.
Santa Fe Coast Lines Hospital	Los Angeles, Calif.
White Memorial Hospital	Los Angeles, Calif.
Highland-Alameda County Hospital	Oakland, Calif.
Orange County Gene	Orange, Calif.
Collis P. and Howard	Pasadena, Calif.
Sacramento County	cramento, Calif.
San Bernardino County Charity Hospital	San Bernardino, Calif.
Mercy Hospital	San Diego, Calif.
San Diego County General Hospital	San Diego, Calif.
Children's Hospital	San Francisco, Calif.
French Hospital	San Francisco, Calif.
Kaiser Foundation Hospital	San Francisco, Calif.
Mary's Help Hospital	San Francisco, Calif.
Mount Zion Hospital	San Francisco, Calif.
St. Joseph's Hospital	San Francisco, Calif.
St. Luke's Hospital	San Francisco, Calif.
St. Mary's Hospital	San Francisco, Calif.
San Francisco General Hospital	San Francisco, Calif.
San Francisco-Stanford Hospitals	San Francisco, Calif.
Southern Pacific General Hospital	San Francisco, Calif.
Santa Clara County Hospital	San Jose, Calif.
Santa Barbara Cottage Hospital	Santa Barbara, Calif.
Santa Monica	ta Monica, Calif.
San Joaquin G	Stockton, Calif.
Harbor General	Torrance, Calif.
Penrose	Springs, Colo.
Colorado	Denver, Colo.
Denver G	Denver, Colo.
General	Denver, Colo.
Mercy	Colo.
Porter	Colo.
Presby	Colo.
St. An	Colo.
St. Jos	Colo.
St. Lu	Colo.
Weld	Colo.
St. Mary-Corwin Hospital	Pueblo, Colo.
Bridgeport Hospital	Bridgeport, Conn.
St. Vincent's Hospital	Bridgeport, Conn.
Bristol	Conn.
Danbur	Conn.
Griffin	Conn.
Greenwi	Conn.
Hartford Hospital	Hartford, Conn.
Hartford Municipal Hospital and Health Center	Hartford, Conn.
Mount Sinai	Conn.
St. Francis	Conn.
Manchester	Conn.
Meriden	Meriden, Conn.
Middlesex	ddletown, Conn.
New Brit	Britain, Conn.
Hospital of St. Raphael	New Haven, Conn.
Lawrence and Memorial Hospitals	New London, Conn.
Norwalk	Norwalk, Conn.
Stamford	Stamford, Conn.
St. Mary'	aterbury, Conn.
Waterbu	aterbury, Conn.
Delaware	Wilmington, Del.
Memorial	Wilmington, Del.
Wilmingt	Wilmington, Del.
District	ashington, D. C.
Doctors	Washington, D. C.
	Washington, D. C.
	Washington, D. C.
	Washington, D. C.
	Washington, D. C.
	Jacksonville, Fla.
	Jacksonville, Fla.
St. Vincent's	sonville, Fla.
Jackson Mer	sonville, Fla.
Mount Sinai	Miami, Fla.
St. Francis	Beach, Fla.
Orange Mem	mi Beach, Fla.
Sacred Hear	Orlando, Fla.
Mound Park	Pensacola, Fla.
Tampa General Hospital	etersburg, Fla.
Good Samaritan Hospital	Tampa, Fla.
	West Palm Beach, Fla.

NONFEDERAL—Continued

St. Mary's Hospital	West Palm Beach, Fla.
Athens General Hospital	Athens, Ga.
St. Mary's Hospital	Athens, Ga
Crawford W. Long Memorial Hospital	Atlanta, Ga.
Georgia Baptist Hospital	Atlanta, Ga.
Grady Memorial Hospital	Atlanta, Ga.
Piedmont Hospital	Atlanta, Ga.
St. Joseph's Infirmary	Atlanta, Ga.
University Hospital	Augusta, Ga.
Medical Center	Columbus, Ga.
Macon Hospital	Macon, Ga.
Kennestone Hospital	Marietta, Ga.
Floyd Hospital	Rome, Ga.
Memorial Hospital of Chatham County	Savannah, Ga.
Kuakini Hospital	Honolulu, Hawaii
Queen's Hospital	Honolulu, Hawaii
St. Francis Hospital	Honolulu, Hawaii
MacNeal Memorial Hospital	Berwyn, Ill.
St. Francis Hospital	Blue Island, Ill.
American Hospital	Chicago, Ill.
Augustana Hospital	Chicago, Ill.
Chicago Wesley Memorial Hospital	Chicago, Ill.
Columbus Hospital	Chicago, Ill.
Cook County Hospital	Chicago, Ill.
	Chicago, Ill.
	Chicago, Ill.
	Chicago, Ill.
	Chicago, Ill.
Hospital of St. Anthony de Padua	Chicago, Ill.
Illinois Central Hospital	Chicago, Ill.
Illinois Masonic Hospital	Chicago, Ill.
Jackson Park Hospital	Chicago, Ill.
Loretto Hospital	Chicago, Ill.
Lutheran Deaconess Home and Hospital	Chicago, Ill.
Mercy Hospital	Chicago, Ill.
Michael Reese Hospital	Chicago, Ill.
Mount Sinai Hospital	Chicago, Ill.
Norwegian-American Hospital	Chicago, Ill.
Passavant Memorial Hospital	Chicago, Ill.
Presbyterian-St. Luke's Hospital	Chicago, Ill.
Provident Hospital	Chicago, Ill.
Ravenswood Hospital	Chicago, Ill.
Resurrection Hospital	Chicago, Ill.
St. Anne's Hospital	Chicago, Ill.
St. Bernard's Hospital	Chicago, Ill.
St. Elizabeth Hospital	Chicago, Ill
St. Joseph Hospital	Chicago, Ill
St. Mary of Nazareth Hospital	Chicago, Ill.
South Chicago Community Hospital	Chicago, Ill.
South Shore Hospital	Chicago, Ill.
Swedish Covenant Hospital	Chicago, Ill.
University of Chicago Clinics	Chicago, Ill.
University of Illinois Research and Educational Hospitals	Chicago, Ill
Woodlawn Hospital	Chicago, Ill.
Decatur and Macon County Hospital	Decatur, Ill.
St. Mary's Hospital	East St. Louis, Ill.
Memorial Hospital of Du Page County	Elmhurst, Ill.
Evanston Hospital	Evanston, Ill.
St. Francis Hospital	Evanston, Ill.
Little Company of Mary Hospital	Evergreen Park, Ill.
Hinsdale Sanitarium and Hospital	Hinsdale, Ill.
Oak Park Hospital	Oak Park, Ill.
West Suburban Hospital	Oak Park, Ill.
Methodist Hospital of Central Illinois	Peoria, Ill.
St. Francis Hospital	Peoria, Ill.
Rockford Memorial Hospital	Rockford, Ill
St. Anthony Hospital	Rockford, Ill.
Swedish-American Hospital	Rockford, Ill.
St. Catherine Hospital	East Chicago, Ind.
St. Mary's Hospital	Evansville, Ind.
Lutheran Hospital	Fort Wayne, Ind.
St. Joseph's Hospital	Fort Wayne, Ind.
Methodist Hospital	Gary, Ind.
St. Mary Mercy Hospital	Gary, Ind.
St. Margaret Hospital	Hammond, Ind.
Indiana University Medical Center	Indianapolis, Ind.
Marion County General Hospital	Indianapolis, Ind.
Methodist Hospital	Indianapolis, Ind.
St. Vincent's Hospital	Indianapolis, Ind.
St. Elizabeth Hospital	Lafayette, Ind.
Ball Memorial Hospital	Muncie, Ind.
Memorial Hospital	South Bend, Ind.
St. Joseph's Hospital	South Bend, Ind.
Mercy Hospital	Cedar Rapids, Iowa
St. Luke's Methodist Hospital	Cedar Rapids, Iowa
Mercy Hospital	Council Bluffs, Iowa
Broadlawns Polk County Hospital	Des Moines, Iowa
Iowa Lutheran Hospital	Des Moines, Iowa
Iowa Methodist Hospital	Des Moines, Iowa
Mercy Hospital	Des Moines, Iowa
State University of Iowa Hospitals	Iowa City, Iowa
Bethany Hospital	Kansas City, Kan.
St. Margaret's Hospital	Kansas City, Kan.
University of Kansas Medical Center	Kansas City, Kan.
St. Francis Hospital	Wichita, Kan.
Wesley Hospital	Wichita, Kan.
Wichita-St. Joseph Hospital	Wichita, Kan.
St. Elizabeth Hospital	Covington, Ky.
Good Samaritan Hospital	Lexington, Ky.
St. Joseph Hospital	Lexington, Ky.
Kentucky Baptist Hospital	Louisville, Ky.
Louisville General Hospital	Louisville, Ky.
Norton Memorial Infirmary	Louisville, Ky.
St. Anthony Hospital	Louisville, Ky.
St. Joseph Infirmary	Louisville, Ky.

NONFEDERAL—Continued

SS. Mary and Elizabeth Hospital	Louisville, Ky.
Charity Hospital of Louisiana	New Orleans, La.
Hotel	New Orleans, La
Mercy	New Orleans, La
Souther	New Orleans, La
Touro Infirmary	New Orleans, La.
Confederate Memorial Medical Center	Shreveport, La.
Highland	Shreveport, La.
North Loui	Shreveport, La.
T. E. Schu	Shreveport, La
Eastern M	Bangor, Maine
Central Ma	Lewiston, Maine
Maine Medical Center	Portland, Maine
Baltimore Cit	Baltimore, Md
Bon Secours	Baltimore, Md.
Church Home	Baltimore, Md.
Franklin Squ	Baltimore, Md.
Lutheran Hospital	Baltimore, Md.
Maryland General Hospital	Baltimore, Md.
Mercy Hospital	Baltimore, Md
Provident Hospital and Free Dispensary	Baltimore, Md
St. Agnes Hospital	Baltimore, Md.
St. Joseph's Hospital	Baltimore, Md.
Sinai	Baltimore, Md.
South	Baltimore, Md
Union	Baltimore, Md.
University	Md
Suburban	Md.
Prince Geo	Md.
	Md.
	Beverly, Mass.
	Boston, Mass.
New England Hospital	Boston, Mass.
St. Elizabeth's Hospital	Boston, Mass.
Brockt	Brockton, Mass.
Cambr	Cambridge, Mass.
Truesd	Fall River, Mass.
Union	Fall River, Mass.
Framingham Union Hospital	Framingham, Mass.
Holyoke Hospital	Holyoke, Mass.
Providence Hospital	Holyoke, Mass.
Lawrence General Hospital	Lawrence, Mass.
Lowell General Hospital	Lowell, Mass.
St. John's Hospital	Lowell, Mass.
St. Joseph's Hospital	Lowell, Mass.
Lynn Hospital	Lynn, Mass.
St. Luke's Hospital	New Bedford, Mass.
Newton-Wellesley Hospital	Newton Lower Falls, Mass
St. Luke's Hospital	Pittsfield, Mass.
Quincy City Hospital	Quincy, Mass.
Salem Hospital	Salem, Mass.
Mercy Hospital	Springfield, Mass.
Springfield Hospital	Springfield, Mass.
Wesson Memorial Hospital	Springfield, Mass.
Waltham	Waltham, Mass.
Memorial	Worcester, Mass.
St. Vincen	Worcester, Mass.
Worcester City Hospital	Worcester, Mass.
St. Joseph Mercy Hospital	Ann Arbor, Mich
University Hospital	Ann Arbor, Mich.
Community Hospital	Battle Creek, Mich.
Leila Y. Post Montgomery Hospital	Battle Creek, Mich.
Mercy Hospital	Benton Harbor, Mich.
Oakwood Hospital	Dearborn, Mich.
Detroit Memorial Hospital	Detroit, Mich.
Evangelical Deaconess Hospital	Detroit, Mich.
Grace Hospital	Detroit, Mich.
Harper Hospital	Detroit, Mich.
Henry Ford Hospital	Detroit, Mich.
Mount Carmel Mercy Hospital	Detroit, Mich
Providence Hospital	Detroit, Mich
Receiving	Detroit, Mich.
St. John	Detroit, Mich.
St. Josepl	Detroit, Mich
Sinai Hospital	Detroit, Mich
Woman's Hospital	Detroit, Mich
Wayne County General Hospital and Infirmary	Eloise, Mich
Hurley Hospital	Flint, Mich.
McLaren General Hospital	Flint, Mich
St. Joseph Hospital	Flint, Mich
Blodgett Memorial Hospital	Grand Rapids, Mich
Butterworth Hospital	Grand Rapids, Mich.
St. Mary's Hospital	Grand Rapids, Mich.
Bon Secours Hospital	Grosse Pointe, Mich.
Highland Park General Hospital	Highland Park, Mich.
Borgess	Kalamazoo, Mich.
Bronson	Kalamazoo, Mich
Edward	Lansing, Mich
St. Lawrence Hospital	Lansing, Mich.
Midland Hospital	Midland, Mich.
Hackley Hospital	Muskegan, Mich.
Pontiac General Hospital	Pontiac, Mich
St. Joseph Mercy Hospital	Pontiac, Mich.
William Beaumont Hospital	Royal Oak, Mich.
Saginaw General Hospital	Saginaw, Mich.
St. Luke's Hospital	Saginaw, Mich.
St. Mary's Hospital	Saginaw, Mich.
James Decker Munson Hospital	Traverse City, Mich.
St. Luke's Hospital	Duluth, Minn.
St. Mary's	Duluth, Minn.
Methodist	Minn.
Minneapolis	Minn.
Mount Sina	Minn.
Northwester	Minn.
St. Mary's	Minn.

NONFEDERAL—Continued

Swedish Hospital	Minneapolis, Minn.
Ancker Hospital	St. Paul, Minn.
Bethesda Hospital	St. Paul, Minn.
Charles T. Miller Hospital	St. Paul, Minn.
St. Joseph's Hospital	St. Paul, Minn.
St. Luke's Hospital	St. Paul, Minn.
Mississippi Baptist Hospital	Jackson, Miss.
Universit	Jackson, Miss.
St. Loui	Clayton, Mo.
Kansas	ansas City, Mo.
Menorah	ansas City, Mo.
Research Hospital	Kansas City, Mo.
St. Joseph Hospital	Kansas City, Mo.
St. Luke's Hospital	Kansas City, Mo.
[illegible]	Kansas City, Mo.
[illegible]	ansas City, Mo.
[illegible]	St. Joseph, Mo.
[illegible]	St. Joseph, Mo.
[illegible]	St. Louis, Mo.
[illegible]	St. Louis, Mo.
[illegible]	St. Louis, Mo.
Jewish Hospital	St. Louis, Mo.
Missouri Baptist Hospital	St. Louis, Mo.
St. Anthony's Hospital	St. Louis, Mo.
St. John's Hospital	St. Louis, Mo.
St. Louis City Hospital	St. Louis, Mo.
St. Luke's Hospital	St. Louis, Mo.
St. Mary's Group of Hospitals	St. Louis, Mo.
St. James Hospital	Butte, Mont.
Montana Deaconess Hospital	Great Falls, Mont.
Bryan Memorial Hospital	Lincoln, Neb.
Lincoln General Hospital	Lincoln, Neb.
St. Elizabeth Hospital	Lincoln, Neb.
Bishop Clarkson Memorial Hospital	Omaha, Neb.
Creighton Memorial St. Joseph Hospital	Omaha, Neb.
Immanuel Hospital	Omaha, Neb.
Nebraska Methodist Hospital	Omaha, Neb.
St. Catherine's Hospital	Omaha, Neb.
University of Nebraska	Omaha, Neb.
Mary Hitchcock Memori	N. H.
Atlantic City Hospital.	N. J.
Bayonne Hospital and Dispensary	Bayonne, N. J.
Cooper Hospital	Camden, N. J.
Our Lady of Lourdes Hospital	Camden, N. J.
West Jersey Hospital	Camden, N. J.
East Orange General Hospital	East Orange, N. J.
Alexian Brothers Hospital	Elizabeth, N. J.
Elizabeth General Hospital and Dispensary	Elizabeth, N. J.
St. Elizabeth Hospital	Elizabeth, N. J.
Englewood Hospital	Englewood, N. J.
Hackensack Hospital	Hackensack, N. J.
St. Mary's Hospital	Hoboken, N. J.
Christ Hospital	Jersey City, N. J.
Jersey City Hospital	Jersey Cty, N. J.
St. Francis Hospital	Jersey City, N. J.
Monmouth Medical Center	Long Branch, N. J.
Mountainside Hospital	Montclair, N. J.
All Souls Hospital	Morristown, N. J.
Morristown Memorial Hospital	Morristown, N. J.
Fitkin Memorial Hospital	Neptune, N.J.
Harrison S. Martland Medical Center	Newark, N. J.
Newark Beth Israel Hospital	Newark, N. J.
Presbyterian Hospital	Newark, N. J.
St. Barnabas Medical Center	Newark, N. J.
St. Michael's	N. J.
Middlesex Gen	N. J.
St. Peter's Ge	N. J.
Orange Memorial Hospital	Orange, N. J.
Bergen Pines County Hospital	Paramus, N. J.
Passaic General Hospital	Passaic, N. J.
St. Mary's Hospital	Passaic, N. J.
Nathan and Miriam Barnert Memorial Hospital	Paterson, N. J.
Paterson General Hospital	Paterson, N. J.
St. Joseph Hospital	Paterson, N. J.
Perth Amboy General Hospital	Perth Amboy, N. J.
Muhlenberg Hospital	Plainfield, N J.
Somerset Hospital	Somerville, N. J.
Overlook Hospital	Summit, N. J.
Holy Name Hospital	Teaneck, N. J.
Mercer Hospital	Trenton, N. J.
St. Francis Hospital	Trenton, N. J.
William McKinley Memorial Hospital	Trenton, N J.
Bernalillo County Indian Hospital	Albuquerque, N. Mex.
Albany Hospital	Albany, N. Y.
Memorial Hospital	Albany, N. Y.
St. Peter's Hospital	Albany, N Y.
Binghamton City Hospital	Binghamton, N. Y.
Lawrence Hospital	Bronxville, N. Y.
Beth-El Hospital	Brooklyn, N. Y.
Brooklyn Hospital	Brooklyn, N. Y.
Coney Island Hospital	Brooklyn, N. Y.
Cumberland Hospital	Brooklyn, N. Y.
Greenpoint Hospital	Brooklyn, N. Y.
Jewish Hospital	Brooklyn, N. Y.
Kings County Hospital Center	Brooklyn, N. Y.
Long Island College Hospital	Brooklyn, N. Y.
Lutheran Hospital	Brooklyn, N. Y.
Lutheran Medical Center	Brooklyn, N. Y.
Maimonides Hospital	Brooklyn, N. Y.
Methodist Hospital	Brooklyn, N. Y.
Lutheran Medical Center	Brooklyn, N. Y.
Prospect Heights Hospital	Brooklyn, N. Y.
St. Catherine's Hospital	Brooklyn, N. Y.
St. John's Episcopal Hospital	Brooklyn, N. Y.
St. Mary's Hospital	Brooklyn, N. Y.
Unity Hospital	Brooklyn, N. Y.

NONFEDERAL—Continued

Wyckoff Heights Hospital	Brooklyn, N. Y.
Buffalo General Hospital	Buffalo, N. Y.
Deaconess Hospital	Buffalo, N. Y.
Edward J. Meyer Memorial Hospital	Buffalo, N. Y.
Mercy	Buffalo, N. Y.
Millard	Buffalo, N. Y.
Sisters	Buffalo, N. Y.
Mary I	operstown, N. Y.
City Hospital at Elmhurst	Elmhurst, N. Y.
Arnot Ogden Memorial Hospital	Elmira, N. Y.
St. Joseph's Hospital	Elmira, N. Y.
Flushing Hospital and Dispensary	Flushing, N. Y.
Community Hospital	Glen Cove, N. Y.
Glens Falls Hospital	Glens Falls, N. Y.
Meadowbrook Hospital	Hempstead, N. Y.
Jamaica Hospital	Jamaica, N. Y.
Mary Immaculate Hospital	Jamaica, N. Y.
Queens Hospital Center	Jamaica, N. Y.
Charles S. Wilson Memorial Hospital	Johnson City, N. Y.
St. John's Long Island City Hospital	Long Island City, N.Y.
Nassau Hospital	Mineola, N. Y.
Northern Westchester Hospital	Mount Kisco, N. Y.
Mount Vernon Hospital	Mount Vernon, N. Y.
St. Luke's Hospital	Newburgh, N. Y.
Long Island Jewish Hospital	New Hyde Park, N. Y.
New Rochelle Hospital	New Rochelle, N. Y.
Beth Israel Hospital	New York City
Bronx Hospital	New York City
Fordham Hospital	New York City
French Hospital	New York City
Grand Central Hospital	New York City
Harlem Hospital	New York City
Hospital for Joint Diseases	New York City
Jewish Memorial Hospital	New York City
Knickerbocker Hospital	New York City
Lebanon Hospital	New York City
Lenox Hill Hospital	New York City
Lincoln Hospital	New York City
Misericordia Hospital	New York City
Morrisania City Hospital	New York City
Mother Cabrini Memorial Hospital	New York City
Mount Sinai Hospital	New York City
New York Infirmary	New York City
New York Polyclinic Medical School and Hospital	New York City
St. Clare's Hospital	New York City
St. Vincent's Hospital	New York City
Sydenham Hospital	New York City
Mount St. Mary's Hospital	Niagara Falls, N. Y.
Niagara Falls Memorial Hospital	Niagara Falls, N. Y.
United Hospital	Port Chester, N. Y.
St. Francis Hospital	Poughkeepsie, N. Y.
Vassar Brothers Hospital	Poughkeepsie, N. Y.
Genesee Hospital	Rochester, N. Y.
Highland Hospital	Rochester, N. Y.
Rochester General Hospital	Rochester, N. Y.
St. Mary's Hospital	Rochester, N. Y.
Strong Memorial-Rochester Municipal Hospitals	Rochester, N. Y.
Ellis Hospital	Schenectady, N. Y.
St. Clare's Hospital	Schenectady, N. Y.
St. Vincent's Hospital	Staten Island, N. Y.
Staten Island Hospital	Staten Island, N. Y.
St. Joseph's Hospital	Syracuse, N. Y.
State University of New York Upstate Medical Center Hospitals	Syracuse, N. Y.
Leonard Hospital	Troy, N. Y.
St. Mary's Hospital	Troy, N. Y.
Samaritan	N. Y.
White Plai	N. Y.
St. John's	N. Y.
St. Joseph's Hospital	Yonkers, N. Y.
Yonkers General	Yonkers, N. Y.
Memorial Mission	Asheville, N. C.
Charlotte Memor	Charlotte, N. C.
Watts Hospital	Durham, N. C.
Moses H Cone Memorial Hospital	Greensboro, N. C.
Rex	N. C.
James	N. C.
City	N. C.
Kate	N. C.
St. John's	Fargo, N. Dak.
St. Luke's	Fargo, N. Dak.
Grand For	Forks, N. Dak.
Akron City	Ohio
Akron Gene	Ohio
St Thomas	Ohio
Barberton	Ohio
Aultma	Ohio
Mercy	Ohio
Bethes	Ohio
[illegible]	Ohio
[illegible]	Ohio
[illegible]	Ohio
Jewish	Ohio
St. Ma	Ohio
Clevela	Ohio
Clevela	Ohio
Evange	Ohio
Fairvie	Ohio
Huron	Ohio
Lutheran	Cleveland, Ohio
Mount Si	Cleveland, Ohio
St. Alexis	Cleveland, Ohio
St. John's	Cleveland, Ohio
St. Luke's	Cleveland, Ohio
St. Vincent Charity Hospital	Cleveland, Ohio
University Hospitals	Cleveland, Ohio

NONFEDERAL—Continued

Doctors Hospital	Cleveland Heights, Ohio
Grant Hospital	Columbus, Ohio
Mount Carmel Hospital	Columbus, Ohio
University Hospitals	Columbus, Ohio
White Cross Hospital	Columbus, Ohio
Good Samaritan Hospital	Dayton, Ohio
Miami Valley Hospital	Dayton, Ohio
St. Elizabeth Hospital	Dayton, Ohio
Elyria Memorial Hospital	Elyria, Ohio
Euclid-Glenville Hospital	Euclid, Ohio
Marymount Hospital	Garfield Heights, Ohio
Mercy Hospital	Hamilton, Ohio
Lakewood Hospital	Lakewood, Ohio
Lima Memorial Hospital	Lima, Ohio
St. Rita's Hospital	Lima, Ohio
St. Joseph Hospital	Lorain, Ohio
Mercy Hospital	Springfield, Ohio
Springfield City Hospital	Springfield, Ohio
Ohio Valley Hospital	Stubenville, Ohio
Flower Hospital	Toledo, Ohio
Maumee Valley Hospital	Toledo, Ohio
Mercy Hospital	Toledo, Ohio
Riverside Hospital	Toledo, Ohio
St. Charles Hospital	Toledo, Ohio
St. Vincent's Hospital	Toledo, Ohio
Toledo Hospital	Toledo, Ohio
Trumbull Memorial Hospital	Warren, Ohio
St. Elizabeth Hospital	Youngstown, Ohio
Youngstown Hospital	Youngstown, Ohio
Good Samaritan Hospital	Zanesville, Ohio
Mercy Hospital-Oklahoma City General	Oklahoma City, Okla.
St. Anthony Hospital	Oklahoma City, Okla.
University of Oklahoma Hospitals	Oklahoma City, Okla.
Wesley Hospital	Oklahoma City, Okla.
Hillcrest Medical Center	Tulsa, Okla.
St. John's Hospital	Tulsa, Okla.
Sacred Heart General Hospital	Eugene, Ore.
Emanuel Hospital	Portland, Ore.
Good Samaritan Hospital	Portland, Ore.
Portland Sanitarium and Hospital	Portland, Ore.
Providence Hospital	Portland, Ore
St. Vincent's Hospital	Portland, Ore.
University of Oregon Medical School Hospitals and Clinics	Portland, Ore.
Abington Memorial Hospital	Abington, Pa.
Allentown Hospital	Allentown, Pa.
Sacred Heart Hospital	Allentown, Pa.
Altoona Hospital	Altoona, Pa.
Mercy Hospital	Altoona, Pa.
St. Luke's Hospital	Bethlehem, Pa.
Lower Bucks County Hospital	Bristol, Pa.
Bryn Mawr Hospital	Bryn Mawr, Pa.
Butler County Memorial Hospital	Butler, Pa.
Chester Hospital	Chester, Pa.
George F. Geisinger Memorial Hospital	Danville, Pa.
Thomas M. Fitzgerald—Mercy Hospital	Darby, Pa.
Easton Hospital	Easton, Pa.
Hamot Hospital	Erie, Pa.
St. Vincent's Hospital	Erie, Pa.
Westmoreland Hospital	Greensburg, Pa.
Harrisburg	Harrisburg, Pa.
Harrisburg	Harrisburg, Pa.
Conemaugh	Johnstown, Pa.
Mercy Hospital	Johnstown, Pa.
Lancaster General Hospital	Lancaster, Pa.
St. Joseph's Hospital	Lancaster, Pa.
McKeesport Hospital	McKeesport, Pa.
Allegheny Valley Hospital	Natrona Heights, Pa.
Montgomery Hospital	Norristown, Pa.
Sacred Heart Hospital	Norristown, Pa.
Albert Einstein Medical Center	Philadelphia
Chestnut Hill Hospital	Philadelphia
Episcopal Hospital	Philadelphia
Frankford Hospital	Philadelphia
Germantown Dispensary and Hospital	Philadelphia
Graduate Hospit	Philadelphia
Hahnemann Med	Philadelphia
Hospital of the	Philadelphia
Hospital of the of Pennsylvania	Philadelphia
Jefferson Medical College Hospital	Philadelphia
Lankenau Hospital	Philadelphia
Memorial Hospital	Philadelphia
	Philadelphia
	Philadelphia
	Philadelphia
	Philadelphia
Northeastern Hospital	Philadelphia
Pennsylvania Hospital	Philadelphia
Philadelphia General Hospital	Philadelphia
	Philadelphia
	Philadelphia
	Philadelphia
St. Mary's Hospital	Philadelphia
Woman's Hospital	Philadelphia
Allegheny General Hospital	Pittsburgh
Mercy Hospital	Pittsburgh
Montefiore Hospital	Pittsburgh
Pittsburgh Hospital	Pittsburgh
Health Center Hospitals University of Pittsburgh School of Medicine	Pittsburgh
St. Francis General Hospital and Rehabilitation Institute	Pittsburgh
St. John's General Hospital	Pittsburgh
St. Joseph's Hospital and Dispensary	Pittsburgh
St. Margaret Memorial Hospital	Pittsburgh

NONFEDERAL—Continued

Shadyside	
South Side	
Western Pe	
Community	
Reading Ho	Reading, Pa.
St. Joseph's Hospital	Reading, Pa
Robert Packer	
Scranton State	
Sewickley Valley	Sewickley, Pa
Uniontown	Uniontown, Pa
Washington	Washington, Pa.
Chester Cou	Vest Chester, Pa.
Mercy Hospital	Wilkes-Barre, Pa
Wilkes-Barre General Hospital	Wilkes-Barre, Pa
Columbia Hospital	Wilkinsburg, Pa
Williamsport Hospital	Williamsport, Pa.
York	York, Pa
Aguad	dilla, P. R
Arecib	cibo, P. R
Bayar	ghts, P. R
Fajardo District Hospital	Fajardo, P. R
Hospital de Damas	Ponce, P. R.
Ponce District Gen	Ponce, P. R.
Rio Piedras Munic	Piedras, P. R.
Presbyterian Hospital	San Juan, P. R.
San Juan	P. R.
Newport	R. I.
Memorial	R. I.
Miriam Hospital	Providence, R. I.
Rhode Island Hospital	Providence, R. I.
Roger Williams General Hospital	Providence, R. I.
St. Joseph's Hospital	Providence, R. I.
Medical College of South Carolina Teaching Hospitals	Charleston, S. C.
Columbia Hospital of Richland County	Columbia, S. C.
McLeod Infirmary	Florence, S. C.
Greenville General	Greenville, S. C.
Orangeburg Region	
Spartanburg Gener	
McKennan Hospita	
Sioux Valley Hospi	
Sacred Heart	
Baroness Erla	Tenn.
Holston Valle	Tenn.
East Tennesse	Tenn.
Fort Sanders Presbyterian Hospital	Knoxville, Tenn.
St. Mary's Memorial Hospital	Knoxville, Tenn.
University of Tennessee Memorial Research Center and Hospital	Knoxville, Tenn.
Baptist Memorial Hospital	Memphis, Tenn.
City of Memphis Hospitals (John Gaston Hospital)	Memphis, Tenn.
Methodist Hospital	Memphis, Tenn.
St. Jose	Memphis, Tenn.
Baptist	Nashville, Tenn.
George	Nashville, Tenn
Nashville General Hospital	Nashville, Tenn
St. Thc	Nashville, Tenn.
Bracken	Austin, Texas
Memori	Christi, Texas
Baylor	Dallas, Texas
Methodi	Dallas, Texas
Parklan	Dallas, Texas
St. Paul's Hospital	Dallas, Texas
Hotel Dieu, Sisters Hospital	El Paso, Texas
R. E. Thomason General Hospital	El Paso, Texas
Harris Hospital	Fort Worth, Texas
John Peter Smith Hospital	Fort Worth, Texas
St. Joseph's Hospital	Fort Worth, Texas
University of Texas Medical Branch Hospitals	Galveston, Texas
Hermann Hospital	Houston, Texas
Jefferson Davis Hospital	Houston, Texas
Memorial Hospital	Houston, Texas
Methodist Hospital	Houston, Texas
St. Joseph's Hospital	Houston, Texas
Baptist Memorial Hospital	San Antonio, Texas
Robert B. Green Memorial Hospital	San Antonio, Texas
Santa Rosa Hospital	San Antonio, Texas
Scott and White Memorial Hospitals	Temple, Texas
Providence Hospital	Waco, Texas
St. Benedict's Hospital	Odgen, Utah
Thomas D. Dee Memorial Hospital	Ogden, Utah
Dr. W. H. Groves Latter-Day Saints Hospital	Salt Lake City, Utah
Holy Cross Hospital	Salt Lake City, Utah
St. Mark's Hospital	Salt Lake City, Utah
Salt Lake County General Hospital	Salt Lake City, Utah
DeGoesbriand Memorial Hospital	Burlington, Vt.
Mary Fletcher Hospital	Burlington, Vt.
Alexandria Hospital	Alexandria, Va.
University of Virginia Hospital	Charlottesville, Va.
Memorial Hospital	Danville, Va.
Mary Immaculate Hospital	Newport News, Va.
	Newport News, Va.
	Norfolk, Va
	Norfolk, Va.
Petersburg General Hospital	Petersburg, Va.
	Portsmouth, Va.
	Richmond, Va.
	Richmond, Va.
Richmond Memorial Hospital	Richmond, Va.
Stuart Circle Hospital	Richmond, Va.
Lewis Gale Hospital	Roanoke, Va.
Roanoke Memorial Hospital	Roanoke, Va
Winchester Memorial Hospital	Winchester, Va.
Doctors Hospital	Seattle, Wash.
King County Hospital Unit No. 1 (Harborview)	Seattle, Wash.
Providence Hospital	Seattle, Wash.

NONFEDERAL -Continued

Seattle General Hospital	Seattle, Wash.
Hospital	Seattle, Wash.
	Seattle, Wash.
	Seattle, Wash.
	Spokane, Wash.
	Spokane, Wash.
	Spokane, Wash.
	Tacoma, Wash.
St. Joseph Hospital	Tacoma, Wash.
Tacoma General Hospital	Tacoma, Wash.
Charleston General Hospital	Charleston, W. Va.
Kanawha Valley Hospital	Charleston, W. Va.
Memorial Hospital	Charleston, W. Va.
Cabell Huntington Hospital	Huntington, W. Va.
St. Mary's Hospital	Huntington, W. Va.
Camden—Clark Memorial Hospital	Parkersburg, W. Va.
St. Joseph's Hospital	Parkersburg, W. Va.
Weirton General Hospital	Weirton, W. Va.
Ohio Valley General Hospital	Wheeling, W. Va.
Wheeling Hospital	Wheeling, W. Va.
Luther Hospital	Eau Claire, Wis.
St. Agnes Hospital	Fond du Lac, Wis.
Mercy Hospital	Janesville, Wis.
La Crosse Lutheran Hospital	La Crosse, Wis.
St. Francis Hospital	La Crosse, Wis.
Madison General Hospital	Madison, Wis.
Methodist Hospital	Madison, Wis.
St. Mary's Hospital	Madison, Wis.
St. Joseph's Hospital	Marshfield, Wis.
Columbia Hospital	Milwaukee
Evangelical Deaconess Hospital	Milwaukee
Milwaukee County Hospital	Milwaukee
Milwaukee Hospital	Milwaukee
Misericordia Hospital	Milwaukee
Mount Sinai Hospital	Milwaukee
St. Joseph's Hospital	Milwaukee
St. Luke's Hospital	Milwaukee
St. Mary's Hospital	Milwaukee
St. Michael Hospital	Milwaukee
St. Mary's Hospital	Wausau, Wis.

ROTATING (Med. Major)

Number of Approved Programs, 8

George Washington University Hospital	Washington, D. C.
Sinai Hospital	Baltimore, Md
University Hospital	Ann Arbor, Mich.
Missouri Baptist Hospital	*St. Louis, Mo.*
Watts Hospital	Durham, N. C.
University of Oklahoma Hospitals	Oklahoma City, Okla.
St. Paul's Hospital	*Dallas, Texas*
Norfolk General Hospital	Norfolk, Va.

ROTATING (Ped. Major)

Number of Approved Programs, 4

Sinai Hospital	Baltimore, Md.
University Hospital	Ann Arbor, Mich.
University of Oklahoma Hospitals	Oklahoma City, Okla.
Norfolk General Hospital	Norfolk, Va.

ROTATING (Ob.-Gyn. Major)

Number of Approved Programs, 3

University Hospital	Ann Arbor, Mich.
University of Oklahoma Hospitals	Oklahoma City, Okla.
Norfolk General Hospital	Norfolk, Va.

ROTATING (*Surg.* Major)

Number of Approved Programs, 8

George Washington University Hospital	Washington, D. C.
Sinai Hospital	Baltimore, Md.
University Hospital	Ann Arbor, Mich.
Receiving Hospital	Detroit, Mich
Missouri Baptist Hospital	St. Louis, Mo.
University of Oklahoma Hospitals	*Oklahoma City*, Okla.
St. Paul's Hospital	Dallas, Texas
Norfolk General Hospital	Norfolk, Va.

OTHER ROTATING

Number of Approved Programs, 10

University of Colorado Med. Center	
Denver General Hospital	*Denver*
Community Rotating	
George Washington University Hospital	Washington, D. C.
Rotating (Path.-Major)	
University Hospital	Ann Arbor, Mich.
Rotating (Neurol.-Major)	
Rotating (Derm.-Major)	
Rotating (*Anes.-Major*)	
Rotating (Path.-Major)	
Rotating (Otol.-Major)	
Rotating (Ophth.-Major)	
Rotating (Gen. Prac.-Major)	
Rotating (Phys.-Med. Rehab. Major)	

MIXED

Number of Approved Programs, 32

University Hospital, Little Rock, Ark.; Med.-Ped.
San Francisco General Hospital, San Francisco; Med.-Surg.
Georgetown University Hospital, *Washington, D. C.*; Med.-Surg.
University of Kansas Medical Center, Kansas City, Kan.; Med.-Path.; Med.-Surg.-Ped.; Path.-Surg.

MIXED--Continued

Baltimore Med.; *Med.-Ped.; Ped.-Med.*
Hospital fo re, Md.; Med.-Surg.-Ob.-Gyn.
University ;.-Ob.-Gyn.
U. S. Publi on; Med.-Surg.
Mount Aub ,.; Med.-Surg.-Ped.
Holyoke I: -Surg.
Jewish Ho rg.
Lutheran : Ob.-Surg.
Kings Cou Med.-Surg.
Long Island College Hospital, Brooklyn; Med.-Ob.-Gyn.; Med.-Surg.; Surg.-Ob.-Gyn.; Surg-Med
Maimonides Hospital, Brooklyn; Med.-Surg.-Ped.; Med.-Ob.-Gyn.-Ped.; Surg.-Ob.-Gyn.-Ped.
Bellevue Hospital Center, New York City
Division I—Medical—Columbia University; Med.-Chest; Med.-Surg. or Path.
Bellevue Hospital Center, New York City
Division I—Surgical—Columbia University; Surg.-Med.
Bellevue Hospital Center, New York City
Division II—Surgical—Cornell University; Med.-Path.
Bellevue Hospital Center, New York City
Division III—Medical—New York University College of Medicine; Surg.-Med.
Bellevue Hospital Center, New York City
Division III—Surgical—New York University College of Medicine; Surg.-Med.
Montefiore Hospital, New York City; Med.-Surg.-Pul.-Neuro.-Neoplastic
Roosevelt Hospital, New York City; Med.-Ped.-Surg.; Surg.-Gyn.-Med.
St. Luke's Hospital, New York City; Med.-Surg.; Surg.-Med.
St. *Joseph's Hospital,* Syracuse; *Med.-Surg.; Med.-Ped.*
State University of New York
Upstate Medical Center Hospitals, Syracuse, N. Y.; Med.-Surg.
Grasslands Hospital, Valhalla, N. Y.; Med.-Surg.-Ped.; Surg.-Med.-Ob.
North Carolina Memorial Hospital, Chapel Hill, N. C.; Med.-Ped.
Duke Hospital, Durham, N. C.; Ob.-Ped.
Watts Hospital, Durham, N. C.; Med.-Ped.-Ob.-Gyn.
North Carolina Baptist Hospital, Winston-Salem, N. C.; Med.-Ob.-*Gyn.-Ped.*
Bethesda Hospital, Cincinnati, Ohio; Med.-Surg.-Ob.-Gyn.
St. Thomas Hospital, Nashville, Tenn.; Med.-Surg.
University of Virginia Hospital, Charlottesville, Va.; Med.-Surg.
Jefferson Hospital, Roanoke, Va.; Surg.-Med.-Ob.
University Hospital, Seattle, Wash.; Med.-Major; Surg.-Major; Ped.-Major; Ob.-Gyn.-Major.
University Hospital, Madison, Wis.; Med.-Surg.; Surg.-Med.

STRAIGHT

Total Number of Approved Programs, 241

Internal Medicine

Number of Approved Programs, 74

Veterans Admin. Hospital	Los Angeles
Veterans Admin. Hospital	Atlanta, Ga.
Veterans Admin. Hospital	Oklahoma City
Veterans Admin. Hospital	Dallas, Texas
University Hospital and Hillman Clinic	Birmingham, Ala.
University Hospital	Little Rock, Ark.
Los Angeles County Hospital	Los Angeles
University of California Hospital	Los Angeles
Palo Alto-Stanford Hospital Center	Palo Alto, Calif.
University of California Hospitals	San Francisco, Calif.
Grace-New Haven Community Hospital	New Haven, Conn.
Georgetown University Hospital	Washington, D. C.
Jackson Memorial Hospital	*Miami, Fla*
Grady Memorial Hospital	Atlanta, Ga.
Eugene Talmadge Memorial Hospital	Augusta, Ga.
Emory Univers	
Michael Reese	, Ga.
Indiana Univer	, Ill.
University of K	Ind.
Louisville General Hospital	Kan.
Ochsner Foundation Hospital	Louisville, Ky.
Baltimore City Hospitals	*New Orleans, La.*
Church Home and Hospital	Baltimore, Md.
Johns Hopkins Hospital	Baltimore, Md.
	Baltimore, Md.
	Baltimore, Md.
	Baltimore, Md.
	Boston, Mass.
	Boston, Mass.
	Boston, Mass.
New England Center Hospital	Boston, Mass.
Peter Bent Brigham Hospital	Boston, Mass.
Northwestern Hospital	Boston, Mass.
University of Minnesota Hospitals	Minneapolis, Minn.
Barnes Hospital	Minneapolis, Minn.
St. Loui	St. Louis, Mo.
St. Mar	St. Louis, Mo.
Jersey City Hospital	St. Louis, Mo.
Albany Hospital	Jersey City, N. J.
Jewish Hospital	Albany, N. Y.
Kings C	Brooklyn, N. Y.
Long I	Brooklyn, N. Y.
Maimoi	Brooklyn, N. Y.
Method	Brooklyn, N. Y.
St. Joh	Brooklyn, N. Y.
Buffalc	Brooklyn, N. Y.
Mary I	Buffalo, N. Y.
Bellevu	perstown, N. Y.
Bronx "	New York City
Knickerbocker Hospital	New York City
New York Hospital	New York City
Presbyterie	New York City
St. Clare's	New York City
	New York City

INTERNAL MEDICINE—Continued

St. Vincent's Hospital	New York City
Genesee Hospital	Rochester, N. Y.
Rochester General Hospital	Rochester, N. Y.
Strong Memorial-Rochester Municipal Hospitals	Rochester, N. Y.
State University of New York Upstate Medical Center Hospitals	Syracuse, N. Y.
North Carolina Memorial Hospital	Chapel Hill, N. C.
Duke Hospital	Durham, N. C.
Watts Hospital	Durham, N. C.
North Carolina Baptist Hospital	Winston-Salem, N. C.
Cleveland Metropolitan General Hospital	Cleveland, Ohio
University Hospitals	Cleveland, Ohio
University Hospitals	Columbus, Ohio
Vanderbilt University Hospital	Nashville, Tenn.
Baylor University Hospital	Dallas, Texas
Parkland Memorial Hospital	Dallas, Texas
Jefferson Davis Hospital	Houston, Texas
Methodist Hospital	Houston, Texas
Salt Lake County General Hospital	Salt Lake City, Utah
University of Virginia Hospital	Charlottesville, Va.
Chesapeake and Ohio Hospital	Clifton Forge, Va.
Medical College of Virginia Hospital Division	Richmond, Va.

PATHOLOGY

Number of Approved Programs, 33

University Hospital	Little Rock, Ark.
University of California Hospital	Los Angeles, Calif.
St. Luke's Hospital	San Francisco, Calif.
University of California Hospitals	San Francisco, Calif.
Grace-New Haven Community Hospital	New Haven, Conn.
Emory University Hospital	Atlanta, Ga.
University of Kansas Medical Center	Kansas City, Kan.
Louisville General Hospital	Louisville, Ky.
Baltimore City Hospitals	Baltimore, Md.
Johns Hopkins Hospital	Baltimore, Md.
Boston City Hospital	Boston, Mass.
Children's Medical Center	Boston, Mass.
Massachusetts General Hospital	Boston, Mass.
Massachusetts Memorial Hospitals	Boston, Mass.
University of Missouri Medical Center	Columbia, Mo.
Barnes Hospital	St. Louis, Mo.
Jersey City Hospital	Jersey City, N. J.
Kings County Hospital Center	Brooklyn, N. Y.
St. Luke's Hospital	Newburgh, N. Y.
Bellevue Hospital Center	New York City
New York Hospital	New York City
Presbyterian Hospital	New York City
Genesee Hospital	Rochester, N. Y.
Strong Memorial-Rochester Municipal Hospitals	Rochester, N. Y.
North Carolina Memorial Hospital	Chapel Hill, N. C.
Duke Hospital	Durham, N. C.
North Carolina Baptist Hospital	Winston-Salem, N. C.
University Hospitals	Cleveland, Ohio
University of Oklahoma Hospitals	Oklahoma City, Okla.
Good Samaritan Hospital	Portland, Ore.
Vanderbilt University Hospital	Nashville, Tenn.
University of Texas Medical Branch Hospitals	Galveston, Texas
Medical College of Virginia Hospital Division	Richmond, Va.

PEDIATRICS

Number of Approved Programs, 56

University Hospital and Hillman Clinic	Birmingham, Ala.
University Hospital	Little Rock, Ark.
Childrens Hospital	Los Angeles, Calif.
University of California Hospital	Los Angeles
University of California Hospitals	San Francisco, Calif.
Colorado General Hospital	Denver, Colo.
Denver General Hospital	Denver, Colo.
Grace-New Haven Community Hospital	New Haven, Conn.
Jackson Memorial Hospital	Miami, Fla.
Grady Memorial Hospital	Atlanta, Ga.
Michael Reese Hospital	Chicago, Ill.
University of Chicago Clinics	Chicago, Ill.
University of Kansas Medical Center	Kansas City, Kan.
Louisville General Hospital	Louisville, Ky.
Baltimore City Hospitals	Baltimore, Md.
Johns Hopkins Hospital	Baltimore, Md.
Sinai Hospital	Baltimore, Md.
University Hospital	Baltimore, Md.
Boston City Hospital	Boston, Mass.
Boston Floating Hospital	Boston, Mass.
Children's Medical Center	Boston, Mass.
Massachusetts General Hospital	Boston, Mass.
Northwestern Hospital	Minneapolis, Minn.
University of Minnesota Hospitals	Minneapolis, Minn.
University of Missouri Medical Center	Columbia, Mo.
Children's Mercy Hospital	Kansas City, Mo.
St. Louis Children's Hospital	St. Louis, Mo.
St. Louis City Hospital	St. Louis, Mo.
St. Mary's Group of Hospitals	St. Louis, Mo.
Children's Memorial Hospital	Omaha, Neb.
Jersey City Hospital	Jersey City, N. J.
Cumberland Hospital	Brooklyn, N. Y.
Kings County Hospital Center	Brooklyn, N. Y.
Long Island College Hospital	Brooklyn, N. Y.
Methodist Hospital	Brooklyn, N. Y.
St. John's Episcopal Hospital	Brooklyn, N. Y.
Children's Hospital	Buffalo, N. Y.
Bellevue Hospital Center	New York City
Bronx Municipal Hospital Center	New York City
New York Hospital	New York City
St. Luke's Hospital	New York City

PEDIATRICS—Continued

Strong Memorial-Rochester Municipal Hospitals	Rochester, N. Y.
State University of New York Upstate Medical Center Hospitals	Syracuse, N. Y.
North Carolina Memorial Hospital	Chapel Hill, N. C.
Duke [illegible]	[illegible]
Watts [illegible]	[illegible]
North [illegible]	[illegible]
Clevel[illegible]	[illegible]
Universi[illegible]	[illegible]l, Ohio
Vanderbilt [illegible]	[illegible], Tenn.
Children's [illegible]	[illegible] Texas
Jefferson I[illegible]	[illegible] Texas
Salt Lake ([illegible]	[illegible], Utah
Children's Orthopedic Hospital	Seattle, Wash.
University Hospital	Madison, Wis.
Milwaukee Children's Hospital	Milwaukee, Wis.

OBSTETRICS AND GYNECOLOGY

Number of Approved Programs, 10

University Hospital	Little Rock, Ark.
Johns Hopkins Hospital	Baltimore, Md.
University of Minnesota Hospitals	Minneapolis, Minn.
Jewish Hospital	Brooklyn, N. Y.
St. John's Episcopal Hospital	Brooklyn, N. Y.
Bronx Municipal Hospital Center	New York City
Genesee Hospital	Rochester, N. Y.
Strong Memorial-Rochester Municipal Hospitals	Rochester, N. Y.
Duke Hospital	Durham, N. C.
Watts Hospital	Durham, N. C.

SURGERY

Number of Approved Programs, 71

University Hospital	Little Rock, Ark.
University of California Hospital	Los Angeles, Calif.
Palo Alto—Stanford Hospital Center	Palo Alto, Calif.
University of California Hospitals	San Francisco, Calif.
Colorado General [illegible]	[illegible] Colo.
Grace-New Haven [illegible]	[illegible] Conn.
Washington Hospi[illegible]	[illegible] D. C.
Jackson Memorial Hospital	Jacksonville, Fla.
Grady Memorial Hospital	Atlanta, Ga.
Emory University Hospital	Atlanta, Ga.
Michael Reese Hospital	Chicago, Ill.
Provident Hospital	Chicago, Ill.
Indiana University Medical Center	Indianapolis, Ind.
University of Kansas Medical Center	Kansas City, Kan.
Louisville General Hospital	Louisville, Ky.
Ochsner Foundation Hospital	New Orleans, La.
Baltimore City Hospitals	Baltimore, Md.
Johns Hopkins Hospital	Baltimore, Md.
Sinai Hospital	Baltimore, Md.
Union Memorial Hospital	Baltimore, Md.
University Hospital	Baltimore, Md.
Beth Israel Hospital	Boston, Mass.
Boston City Hospital	Boston, Mass.
Massachusetts General Hospital	Boston, Mass.
Massachusetts Memorial Hospitals	Boston, Mass.
New England Center Hospital	Boston, Mass.
Peter Bent Brigham Hospital	Boston, Mass.
Northwestern Hospital	Minneapolis, Minn.
University of Minnesota Hospitals	Minneapolis, Minn.
Barnes Hospital	St. Louis, Mo.
St. Louis City Hospital	St. Louis, Mo.
St. Mary's Group of Hospitals	St. Louis, Mo.
Jersey City Hospital	Jersey City, N. J.
Albany Hospital	Albany, N. Y.
Cumberland Hospital	Brooklyn, N. Y.
Kings County Hospital Center	Brooklyn, N. Y.
Long Island College Hospital	Brooklyn, N. Y.
Methodist Hospital	Brooklyn, N. Y.
St. John's Episcopal Hospital	Brooklyn, N. Y.
City Hospital at Elmhurst	Elmhurst, N. Y.
Jamaica Hospital	Jamaica, N. Y.
Bellevue Hospital Center	New York City
Bronx Municipal Hospital Center	New York City
French Hospital	New York City
Knickerbocker Hospital	New York City
Lebanon Hospital	New York City
New York Hospital	New York City
[illegible]	New York City
[illegible]	New York City
[illegible]	New York City
[illegible]	Rochester, N. Y.
[illegible]	Rochester, N. Y.
Highland Hospital	Rochester, N. Y.
Rochester General Hospital	Rochester, N. Y.
Strong Memorial-Rochester Municipal Hospitals	Rochester, N. Y.
State University of New York Upstate Medical Center Hospitals	Syracuse, N. Y.
North Carolina Memorial Hospital	Chapel Hill, N. C.
Duke Hospital	Durham, N. C.
Watts Hospital	Durham, N. C.
North Carolina Baptist Hospital	Winston-Salem, N. C.
Good Samaritan Hospital	Cincinnati, Ohio
Cleveland Clinic Hospital	Cleveland, Ohio
Cleveland Metropolitan General Hospital	Cleveland, Ohio
University Hospitals	Cleveland, Ohio
University Hospitals	Columbus, Ohio
Vanderbilt University Hospital	Nashville, Tenn.
Baylor University Hospital	Dallas, Texas
Jefferson Davis Hospital	Houston, Texas
Methodist Hospital	Houston, Texas
Salt Lake County General Hospital	Salt Lake City, Utah
University of Virginia Hospital	Charlottesville, Va.
Medical College of Virginia Hospital Division	Richmond, Va.

APPROVED RESIDENCIES

Council on Medical Education and Hospitals of the American Medical Association
535 North Dearborn Street, Chicago 10

Revised to September 1, 1959

Hospitals, 1,298; Residencies, 31,818

The following services are approved by the Council on Medical Education and Hospitals as meeting the requirements of the Essentials of Approved Residencies. In those specialties in which certifying boards have been established approval is extended in concurrence with the Board concerned as indicated. The number of years of training for which approval has been granted is indicated in the column, "Length of Approved Program (years)." Residencies in which this designation does not appear have been approved without specifying the number of years for which they are accredited. The beginning stipends for Federal hospitals have not been listed; they are established in accordance with government pay tables.

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1. ALLERGY

Residency programs in the following hospitals have been approved for ONE to TWO years of training by the Council and the Subspecialty Board for Allergy of the American Board of Internal Medicine. (For programs in Pediatric Allergy see page 753.)

Hospitals, 23; Residencies, 35

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
UNITED STATES ARMY							
Army Medical Center [1-3]	Washington, D. C.	H. E. Ratcliffe	...	20,502	2	2	...
NONFEDERAL AND VETERANS ADMINISTRATION							
Scripps Clinic & Research Foundation	La Jolla, Calif.	N. A. Wilhelm	64	8,867	..	..	...
Veterans Admin. Hospital [1-3]	Long Beach, Calif.	K. H. Thayer	549	2,791	..	2	347
Kaiser Foundation Hospital [1-3]	San Francisco	B. F. Feingold	4	74,004	..	2	200
Michael Reese Hospital [1-3]	Chicago	M. Mosko, A. Matheson	79	2,121	1	1	125
Northwestern University Medical Center [1-3]	Chicago	S. Feinberg	...	3,721	1	1	250
University of Illinois Research and Educational Hospitals [1-3]	Chicago	M. Samter	8	6,776	1	1	300
Massachusetts General Hospital [1-3]	Boston	F. C. Lowell	...	6,976	..	..	67
University Hospital [1-3]	Ann Arbor, Mich.	J. M. Sheldon	11	11,046	1	5	250
Mayo Foundation [1]	Rochester, Minn.	....	Incl. in Int. Med.		..	..	...
Barnes Hospital [1-3]	St. Louis	J. Noah	...	2,109	2	3	...
Jewish Hospital [1-3]	Brooklyn, N. Y.	M. Grolnick	52	7,432	..	1	100
Buffalo General Hospital [1-3]	Buffalo	C. E. Arbesman	...	1,957	1	1	175
Roosevelt Hospital [3]	New York City	R. A. Cooke	154	38,981	4	4	208
Duke Hospital [1-3]	Durham, N. C.	O. Hansen-Pruss	209	639	..	1	250
Ohio State University Hospitals University Hospital [1-3]	Columbus, Ohio	W. F. Mitchell	Incl. in Int. Med.		..	1	252
Hospital of the University of Pennsylvania	Philadelphia	....	...	...	..	..	...
Temple University Hospital [1-3]	Philadelphia	L. Tuft	...	...	1	1	...
Montefiore Hospital [1-3]	Pittsburgh	L. H. Criep	71	2,658	1	1	225
Veterans Admin. Hospital [1-3]	Pittsburgh	L. H. Criep	312	2,600	2	2	271
University of Virginia Hospital [1-3]	Charlottesville, Va.	O. Swineford, Jr.	...	3,525	3	3	200
Medical College of Virginia-Hospital Division [1-3]	Richmond, Va.	M. E. B. Owens, Jr.	...	4,248	1	1	125
University Hospitals [1-3]	Madison, Wis.	S. B. Crepea	...	5,138	2	2	200

2. ANESTHESIOLOGY

Residency programs in the following hospitals have been approved for TWO years of training by the Council and the American Board of Anesthesiology, through the Residency Review Committee for Anesthesiology.

Hospitals, 227; Residencies, 1,409

Name of Hospital	Location	Chief of Service	Total Anesthetics	Inhalation Anesthetics	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
UNITED STATES AIR FORCE							
U. S. Air Force Hospital	San Antonio, Texas	A. B. Tarrow	7,530	3,841	3	6	...

Numerical and other references will be found on pages 788 through 790.

2. ANESTHESIOLOGY—Continued

Name of Hospital	Location	Chief of Service	Total Anesthetics	Inhalation Anesthetics	First Year Residencies Offered[8]	Total Residencies Offered[8]	Beginning Stipend (Month)
UNITED STATES ARMY							
Letterman Army Hospital [1-3]	San Francisco	J. F. Kellogg	5,210	2,673	..	2	...
Fitzsimons Army Hospital [1-3]	Denver	J. G. Inman	5,520	2,666	..	2	...
Army Medical Center [1-3]	Washington, D. C	H. C. Slocum	10,539	4,067	4	10	...
Brooke Army Hospital [1-3]	San Antonio, Texas	J. A. Jenicek	6,745	3,014	4	10	...
UNITED STATES NAVY							
U. S. Naval Hospital [1-3]	Oakland, Calif.	E. E. Parker	5,339	901	2	4	...
U. S. Naval Hospital [1]	San Diego, Calif.	J. M. Hanner	15,805	1,538	2	4	...
U. S. Naval Hospital [1-3]	Bethesda, Md.	J. H. Kurfees	9,143	2,577	2	4	...
U. S. Naval Hospital [1-3]	Chelsea, Mass.	D. R. Buechel	2,520	1,262	2	4	...
U. S. Naval Hospital	St. Albans, N. Y.	D. M. Pino	5,563	298	2	4	...
U. S. Naval Hospital [1-361]	Philadelphia	T. C. Deas	6,338	1,226	2	4	...
UNITED STATES PUBLIC HEALTH SERVICE							
U. S. Public Health Service Hospital [1-3-285]	Stapleton, S. I., N. Y.	K. F Urbach	3,261	1,664	2	4	...
NONFEDERAL AND VETERANS ADMINISTRATION							
University of Alabama Medical Center							
University Hospital and Hillman Clinic [1-3]	Birmingham, Ala.	A. McNeal	10,223	7,260	3	6	143
Lloyd Noland Hospital [1-3]	Fairfield, Ala.	R. W. Grady	3,740	1,668	2	4	250
St. Vincent Infirmary [1-3]	Little Rock, Ark.	J. P. Hickey	6,868	1,565	4	8	300
University Hospital [1]	Little Rock, Ark.	C. W. Shafer	3,725	2,161	4	8	275
Loma Linda Sanitarium and Hospital [1-3]	Loma Linda, Calif.	B. D. Briggs	2,890	2,248	3	5	265
Los Angeles County Hospital [1-88]	Los Angeles	J. Denson	14,259	10,824	15	29	259
University of California Hospital [1-3]	Los Angeles	J. B. Dillon	4,459	3,610	4	8	229
Veterans Admin. Hospital [1-3]	Los Angeles	N. H. Rupp	4,793	1,403	6	12	270
White Memorial Hospital [1-3-88]	Los Angeles	F. E. Leffingwell	5,628	3,144	6	12	215
Highland-Alameda County Hospital [1-3]	Oakland, Calif.	C. H. Gallup	5,568	2,574	4	8	200
Children's Hospital	San Francisco	....	...	...	..	..	...
Kaiser Foundation Hospital [1-3]	San Francisco	E. P Shannon	5,497	1,463	2	4	200
St. Joseph's Hospital [1-3]	San Francisco	R. A. Simpson	4,272	2,202	1	2	300
University of California Hospitals [1]	San Francisco	S. C. Cullen	4,995	4,578	5	15	231
San Francisco Hospital [1]	San Francisco	B. Sorkin	3,608	446	..	..	220
Santa Clara County Hospital [1-3]	San Jose, Calif.	H. Matthews, J. W. Pender	2,215	1,622	..	3	260
Stanford Medical Center and Associated Hospitals							
Palo Alto-Stanford Hospital Center	Palo Alto, Calif.	J. G. Allen	...	...	2	3	...
Veterans Admin. Hospital	Palo Alto, Calif.	....	...	...	..	..	...
Harbor General Hospital	Torrance, Calif.	....	...	...	..	..	...
University of Colorado Medical Center							
Colorado General Hospital [1-3]	Denver	R. W. Virtue	3,084	2,060	5	12	180
Denver General Hospital [1-3]	Denver	R. W. Virtue	3,591	2,230	..	..	179
Veterans Admin. Hospital [1-3]	Denver	F. Brown	1,936	1,218	2	3	254
Bridgeport Hospital [1-3]	Bridgeport, Conn.	D. Massey	9,541	4,898	1	2	240
Hartford Hospital [1-3]	Hartford, Conn.	R. M. Tovell	44,231	17,642	10	20	150
St. Francis Hospital [1-3]	Hartford, Conn	S. J. Martin	16,661	7,100	3	6	175
Grace-New Haven Community Hospital [1-3]	New Haven, Conn.	N. M. Greene	13,345	11,276	5	10	50
Hospital of St. Raphael [3]	New Haven, Conn.	M. Garofalo	10,383	8,665	2	4	150
St. Mary's Hospital [1-3]	Waterbury, Conn.	W. S. De Wald	7,649	3,885	2	4	225
District of Columbia General Hospital [1-3]	Washington, D. C.	S. N. Albert	6,182	4,495	3	5	233
Georgetown University Hospital [1-3]	Washington, D. C.	T. F. McDermott	9,628	6,992	6	11	175
George Washington University Hospital [1-3]	Washington, D. C.	C. S. Coakley	12,112	10,453	7	14	150
Providence Hospital [3]	Washington, D. C.	W. Devlin	12,021	10,365	1	2	200
Washington Hospital Center [1-3]	Washington, D. C	W. Bageant	8,591	7,780	6	13	215
Jackson Memorial Hospital [1-3]	Miami, Fla.	J. G. Converse	14,513	11,415	5	10	200
Medical College of Georgia Hospitals							
Eugene Talmadge Memorial Hospital [1-3]	Augusta, Ga.	P. P. Volpitto	2,027	1,615	4	8	250
University Hospital [1-3]	Augusta, Ga.	E. Rushia	5,202	4,674	3	6	200
Emory University Hospital	Emory University, Ga.	W. H Galvin	6,206	5,277	1	2	235
Illinois Masonic Hospital [1-3]	Chicago	I. Illes	7,773	4,874	1	3	115
Michael Reese Hospital [1-3]	Chicago	J. H Bolgla	10,326	3,846	2	4	125
Mount Sinai Hospital [1-3]	Chicago	R. Weyl	5,407	4,800	3	8	225
Northwestern University Medical Center							
Chicago Wesley Memorial Hospital [1-3]	Chicago	M. Karp	11,362	8,845	3	6	100
Passavant Memorial Hospital [1-3]	Chicago	L. Watt	4,666	4,437	1	1	125
Veterans Admin. Research Hospital [1-3]	Chicago	M. Karp	1,351	981	1	2	271
Presbyterian-St. Luke's Hospital [1-3-411]	Chicago	P. W. Searles	12,772	11,271	11	21	125
University of Chicago Clinics [1-3]	Chicago	E. T. Morch	8,865	3,732	5	11	200
University of Illinois Research and Educational Hospitals [1-3]	Chicago	M. S. Sadove	10,161	4,249	6	12	145
Evanston Hospital [1-3]	Evanston, Ill.	C. A. Baldwin, Jr.	7,722	1,721	1	2	225
Veterans Admin. Hospital [1-3-153]	Hines, Ill.	M. Sadove	3,080	1,739	1	1	270
St. Joseph's Hospital [3]	Joliet, Ill.	L. D. Ruttle	6,348	3,829	2	4	350
Indiana University Medical Center and Affiliated Hospitals							
Indiana University Medical Center Hospitals [1]	Indianapolis	V. K. Stoelting	10,654	7,150	13	15	225
Marion County General Hospital [1-3]	Indianapolis	R E. Vore	4,095	3,291	3	6	210
State University of Iowa Hospitals [1-3]	Iowa City	W. K. Hamilton	12,217	7,645	7	14	175
Veterans Admin. Hospital [1-3]	Des Moines, Iowa	J. L. Bailey	2,557	501	6	12	271
Veterans Admin. Hospital [1-3]	Iowa City	W. K. Hamilton	1,523	286	2	4	270
University of Kansas Medical Center [1-3]	Kansas City, Kan.	J. Hansen	7,730	6,166	4	10	125
St. Francis Hospital [1-3]	Wichita, Kan.	R. T. Parmley	12,838	11,170	3	6	...
University of Louisville Medical Center							
Louisville General Hospital [1-3]	Louisville, Ky.	E. H. Conner	4,769	3,333	4	10	125
Charity Hospital of Louisiana	New Orleans	J. Adriani	24,950	12,120	7	14	125
Veterans Admin. Hospital	New Orleans	K. E. Bray	...	...	..	..	...
Ochsner Foundation Hospital [1-3]	New Orleans	G. B. Grant	10,876	3,073	2	6	225
Eastern Maine General Hospital [1-3]	Bangor, Maine	C. S. Dwyer	6,618	5,294	1	2	125

Numerical and other references will be found on pages 788 through 790.

2. ANESTHESIOLOGY—Continued

Name of Hospital	Location	Chief of Service	Total Anesthetics	Inhalation Anesthetics	First Year Residencies Offered [3]	Total Residencies Offered [3]	Beginning Stipend (Month)
Central Maine General Hospital [1]	Lewiston, Maine	G. Clapperton	4,129	3,718	..	1	225
Maine Medical Center [1-3]	Portland, Maine	J. R. Lincoln	8,031	5,650	3	6	125
Baltimore City Hospitals [1-3]	Baltimore	P. Safar	5,257	2,947	4	8	200
Johns Hopkins Hospital	Baltimore		...	...	..	..	...
University Hospital	Baltimore		...	...	..	..	...
Boston City Hospital [1]	Boston	P. S. Marcus	14,006	6,538	8	16	182
Lahey Clinic [1-3-200]	Boston	U. H. Eversole	7,502	5,140	5	10	200
Massachusetts General Hospital [1-3]	Boston	H. K. Beecher	13,465	5,432	..	..	67
Massachusetts Memorial Hospitals [1-3]	Boston	E. Sneddon	3,541	2,715	3	6	175
New England Center Hospital [1-3]	Boston	B. E. Etsten	2,774	1,803	3	7	100
New England Deaconess Hospital [1-3]	Boston	L. V. Hand, F. J. Audin	4,189	2,371	4	7	200
New England Hospital [1-3]	Boston	E. E. Bartlett	3,135	2,776	2	2	85
Peter Bent Brigham Hospital [1-3]	Boston	L. D. Vandam	3,840	2,300	2	4	100
St. Elizabeth's Hospital [1-3]	Boston	L. P. Zentgraf	14,083	3,580	2	4	125
Veterans Admin. Hospital [1-3]	Boston (Jamaica Plain)	D. L. Mahler	4,427	1,394	1	2	271
Cambridge City Hospital [1-3]	Cambridge, Mass.	F. C. Callahan	3,991	2,551	1	2	160
Mount Auburn Hospital [1-3]	Cambridge, Mass.	J. Buskirk	5,059	3,055	2	3	300
Holyoke Hospital [1-3]	Holyoke, Mass.	M. G. Black	5,211	2,575	2	2	100
Springfield Hospital [1]	Springfield, Mass.	C. Bryant	11,092	80	1	2	125
St. Vincent Hospital [1-3]	Worcester, Mass.	W. J. Martin, Jr.	11,664	8,766	3	6	175
University Hospital [1-3-215]	Ann Arbor, Mich.	R. B. Sweet	9,703	3,150	4	8	160
Harper Hospital [1-3]	Detroit	A. B. Stearns	14,246	3,929	2	4	275
Henry Ford Hospital [1-3]	Detroit	P. R. Dumke	15,020	7,954	5	11	265
Providence Hospital [1-3]	Detroit	N. M. Bittrich	6,115	1,498	2	4	275
Receiving Hospital [1-3-217]	Detroit	F. E. Greifenstein	9,017	2,465	7	16	303
Sinai Hospital [1-3]	Detroit	E. M. Brown	6,635	4,998	2	4	300
Butterworth Hospital [1-3]	Grand Rapids, Mich.	M. L. Byrd	12,154	5,361	1	2	300
University of Minnesota Hospitals [1-3-232]	Minneapolis	F. H. Van Bergen	17,050	8,271	15	32	244
Mayo Foundation [1]	Rochester, Minn.	A. Faulconer, Jr.	35,000	25,000	5	18	175
University of Missouri Medical Center [1-3]	Columbia, Mo.	H. E. Stephenson	1,269	1,118	4	8	200
Barnes Hospital [1-3]	St. Louis	R. B. Dodd	17,632	15,869	5	8	150
Jewish Hospital [1-3]	St. Louis	D. J. Dickler	5 788	3,571	1	2	150
St. John's Hospital [1-3]	St. Louis	S. Brown	8,013	5,801	1	2	200
Veterans Admin. Hospital [1-3]	St. Louis	R. B. Dodd	3,441	1,197	2	4	271
St. John's Hospital	Springfield, Mo.	O. B. Crawford	6,097	4,119	2	4	300
University of Nebraska Hospital [1-3]	Omaha, Neb.	J. L. Barmore	1,935	480	2	4	200
Mary Hitchcock Memorial Hospital [1-3]	Hanover, N. H.	R. H. Barrett	5,633	3,454	3	7	218
West Jersey Hospital	Camden, N. J.		...	...	..	..	...
Hackensack Hospital [1-3]	Hackensack, N. J.	L. W. Netz	10,190	8,086	1	2	150
Jersey City Medical Center [1-3]	Jersey City, N. J.	W. J. Gleeson	5,006	2,972	3	6	108
St. Joseph Hospital [1-3]	Paterson, N. J.	E. T. Lawless	7,031	5,840	2	4	200
Albany Hospital [1-3]	Albany, N. Y.	C. M. Landmesser	8,708	6,434	5	14	160
Beth El Hospital [1-3]	Brooklyn, N. Y.	A. C. Goldfeder	7,372	2,905	1	2	150
Jewish Hospital [1-3]	Brooklyn, N. Y.	I. Pallin	9,700	7,340	6	11	100
Kings County Hospital Center	Brooklyn, N. Y.	M. H. Harmel	9,418	8,041	6	12	145
Maimonides Hospital [1-3]	Brooklyn, N. Y.	L. Holzmann	9,893	5,768	2	3	75
Methodist Hospital [1-3]	Brooklyn, N. Y.	G. Wallace	6,346	5,942	1	2	175
St. Catherine's Hospital [1-3]	Brooklyn, N. Y.	F. P. Ansbro	4,688	2,907	1	2	125
Veterans Admin. Hospital [1-3]	Brooklyn, N. Y.	H. I. Lipson	2,190	918	2	6	270
Buffalo General Hospital [1-3]	Buffalo	R. N. Terry	15,031	8,054	3	6	175
Edward J. Meyer Memorial Hospital [1-3]	Buffalo	B. D. King	3,600	3,000	2	5	247
Millard Fillmore Hospital [1-3]	Buffalo	E. D. Babbage	27,823	15,111	..	1	285
Veterans Admin. Hospital [1-3]	Buffalo	S. I. Guest	3,428	1,366	2	4	271
Flushing Hospital and Dispensary [1-3]	Flushing, N. Y.	E. Apogi	13.706	9,205	1	2	175
Long Island Jewish Hospital [1-3]	New Hyde Park, L. I., N. Y.	S. Surks	6,155	3,566	2	4	75
Bellevue Hospital Center Div. IV—New York University Post-Graduate Medical School [1-3]	New York City	E. A. Rovenstine	14,994	8,966	10	18	145
Beth Israel Hospital [1-3]	New York City	S. G. Hershey	4,043	3,112	2	5	160
Bronx Municipal Hospital Center [1-3]	New York City	L. R. Orkin	10,816	7,931	7	14	145
Harlem Hospital [1-3]	New York City	H. D. Mayer	4,023	3,127	1	2	145
Hospital for Joint Diseases [1-3]	New York City	A. M. Betcher	3,388	2,445	2	3	80
Lenox Hill Hospital [1-3]	New York City	G. Rich	6,682	6,539	2	3	180
Memorial Center for Cancer and Allied Diseases [1-3]	New York City	W. S. Howland	7,000	5,486	2	9	200
James Ewing Hospital			...	...	..	..	...
Memorial Hospital			...	...	..	..	...
Montefiore Hospital [1-3]	New York City	E. Kepes	3,822	2,772	5	6	187
Mount Sinai Hospital [1-3]	New York City	M. H. Adelman	13,232	7,810	4	7	75
New York Hospital [1-3]	New York City	J. Artusio	19,044	15,582	6	12	164
New York Medical College—Metropolitan Medical Center Flower and Fifth Avenue Hospitals [1-3]	New York City	F. E. Fierro	6,241	5,097	2	5	200
Metropolitan Hospital [1-3]	New York City	F. E. Fierro	5,151	2,074	6	12	145
New York Polyclinic Medical School and Hospital [1]	New York City	J. Milowsky	6,153	4,930	4	8	125
Presbyterian Hospital [1]	New York City	E. M. Papper	20,665	16,833	13	27	250
St. Clare's Hospital [1-3]	New York City	J. Lawrence	3,139	1,818	1	2	200
St. Luke's Hospital [1-3]	New York City	G. E. Burford	6,456	3,783	3	6	100
St. Vincent's Hospital [1-3]	New York City	R. G. Hicks	9,361	3,817	4	8	150
Veterans Admin. Hospital (Bronx) [1-3]	New York City	B. Ciliberti	3,614	1,363	3	6	271
Genesee Hospital [3]	Rochester, N. Y.	E. Kistler	6,835	4,958	1	2	150
Rochester General Hospital [1-3]	Rochester, N. Y.	V. J. Coviello	11,002	10,567	1	2	...
St. Mary's Hospital [1-3]	Rochester, N. Y.	J. Della Porta	9,327	6,900	1	2	225
Strong Memorial-Rochester Municipal Hospital [1-3]	Rochester, N. Y.	Alastair J. Gillies	8,279	6,579	4	8	117
Ellis Hospital [1-3]	Schenectady, N. Y.	H. A. Snell	7,150	1,399	1	2	150
St. Joseph's Hospital [1-3]	Syracuse, N. Y.	C. J. Geiger, Jr.	6,343	3,919	3	3	233
State University of New York Upstate Medical Center [1-3]	Syracuse, N. Y.	E. J. Delmonico	13,322	3,365	5	12	233
Grasslands Hospital [1-3]	Valhalla, N. Y.	H. F. Bishop	1,842	887	1	3	175

Numerical and other references will be found on pages 788 through 790.

2. ANESTHESIOLOGY—Continued

Name of Hospital	Location	Chief of Service	Total Anesthetics	Inhalation Anesthetics	First Year Residencies Offered *	Total Residencies Offered *	Beginning Stipend (Month)
North Carolina Memorial Hospital [1-3]	Chapel Hill, N. C.	D. A. Davis	4,621	3,283	3	7	175
Duke Hospital [1-3]	Durham, N. C.	C. R. Stephen	10,691	7,019	6	11	200
North Carolina Baptist Hospital [1-3]	*Winston-Salem, N. C.*	*D. L. Crandell*	*7,906*	*6,005*	1	2	166
Mercy Hospital [1-3]	Canton, Ohio	E. C. Reno	8,076	7,410	3	5	...
Christ Hospital [1-3]	Cincinnati	E. Hartenian	12,364	4,915	1	2	200
Cleveland Clinic Hospital [1-3]	Cleveland	D. E. Hale	11,222	7,968	2	4	275
Cleveland Metropolitan General Hospital	Cleveland	....	...	...	..	..	...
Fairview Park Hospital [1-3]	Cleveland	J. E. Walkowiak	7,919	5,481	2	6	...
Huron Road Hospital [1-3]	Cleveland	J. K. Potter	16,389	7,722	5	10	300
Mount Sinai Hospital [1-3]	Cleveland	S. Katz	10,571	9,291	2	4	215
St. Alexis Hospital [1-3]	Cleveland	M. Oppenheim	5,451	3,753	2	4	225
St. Luke's Hospital [1-3]	Cleveland	B. B. Sankey	13,332	7,984	2	4	200
St. Vincent Charity Hospital	Cleveland	....	...	...	..	..	...
University Hospitals [1-3]	Cleveland	R. A. Hingson	15,900	7,031	5	10	125
Ohio State University Hospitals							
University Hospital [1-3]	Columbus, Ohio	J. J. Jacoby	19,167	14,358	10	21	177
Marymount Hospital [1-3]	Garfield Heights, Ohio	N. G. De Piero	3,052	3,036	2	4	200
Mercy Hospital [1-3]	*Hamilton, Ohio*	*J. Uhl*	*5,922*	5,134	1	2	200
Toledo Hospital [1-3]	Toledo, Ohio	D. M. Katchka	9,227	4,949	1	2	275
St. Elizabeth Hospital [1-3]	Youngstown, Ohio	A. J. Bayuk	11,767	7,093	2	4	300
Youngstown Hospital [1-3]	Youngstown, Ohio	D. W. Metcalf	15,717	8,603	2	4	325
University of Oklahoma Medical Center		J. M. White	...	...	4	9	...
University Hospitals [1-3]	Oklahoma City	....	4,450	3,629	..	..	200
Veterans Admin. Hospital [1]	Oklahoma City	....	1,791	798	..	..	271
University of Oregon Medical School							
Hospitals and Clinics [1-3]	Portland, Ore.	F. Haugen	6,792	3,527	3	6	125
Geo. F. Geisinger Memorial Hospital [1-3]	Danville, Pa.	J. M. Schwab	4,966	1,902	2	4	175
Conemaugh Valley Memorial Hospital [1-3-362]	Johnstown, Pa.	P. C. Lund	9,442	4,224	2	4	300
Albert Einstein Medical Center [1-3]	Philadelphia	M. L. Bernstine	8,436	7,555	3	6	200
Graduate Hospital of the							
University of Pennsylvania [1-3]	Philadelphia	H. H. Stone	5,963	5,391	1	1	100
Hahnemann Medical College and Hospital [1-3]	Philadelphia	A. J. Catenacci	7,053	2,256	5	12	75
Hospital of the University of Pennsylvania [1-3]	Philadelphia	R. Dripps	13,852	7,240	7	21	150
Jefferson Medical College Hospital [1-3]	Philadelphia	L. J. Hampton	11,280	9,250	6	10	125
Pennsylvania Hospital [1-3]	Philadelphia	M. V. Troncelliti	9,717	7,974	1	2	100
Philadelphia General Hospital [1-3]	Philadelphia	M. Deming	6,102	3,132	3	6	300
Presbyterian Hospital [1-3]	Philadelphia	S. Schotz	4,811	4,098	2	5	175
Temple University Hospital [1-3]	Philadelphia	L. W. Krumperman	11,877	7,226	1	5	...
Allegheny General Hospital [1-3]	Pittsburgh	R. L. Patterson	10,854	8,756	3	6	200
Mercy Hospital [1-3]	Pittsburgh	F. F. Foldes	10,666	6,686	4	10	235
Montefiore Hospital [1-3-362]	Pittsburgh	L. G. David	6,398	5,246	1	4	225
St. Francis General Hospital and							
Rehabilitation Institute [1-3]	Pittsburgh	G. J. Thomas	10,545	5,230	3	6	240
Reading Hospital [1-3]	Reading, Pa.	M. Kerry	7,044	5,355	2	4	...
Robert Packer Hospital [1-3]	Sayre, Pa.	W. Brehm	4,915	4,663	2	4	225
Hospital De Damas	Ponce, P. R.	E. C. Yondan	2,090	1,752	1	2	200
San Juan City Hospital [1-3]	San Juan, P. R.	F. J. Gonzalez	3,260	1,364	2	4	175
Rhode Island Hospital [1-3]	Providence, R. I.	M. Saklad	11,966	5,934	3	6	125
Teaching Hospitals of the Medical College							
of South Carolina [1]	Charleston, S. C.	W. Hamelberg	11,424	10,175	3	6	200
Baroness Erlanger Hospital [1-3]	Chattanooga, Tenn.	R. Baldwin	8,177	4,630	4	6	325
University of Tennessee Memorial Research							
Center and Hospital [1]	Knoxville, Tenn.	W. F. Powell	3,357	2,459	2	2	320
City of Memphis Hospitals	Memphis, Tenn.	....	...	...	..	..	...
Vanderbilt University Hospital [1-3]	Nashville, Tenn.	B. H. Robbins	5,375	2,895	2	4	50
Parkland Memorial Hospital [1-3]	Dallas, Texas	M. T. Jenkins	11,285	8,219	8	16	225
Harris Hospital [1]	Fort Worth, Texas	A. N. Heinrichs	12,921	5,202	1	2	300
University of Texas Medical							
Branch Hospitals [1-3]	Galveston, Texas	C. Allen	7,735	5,955	6	12	100
Baylor University College of Medicine Affiliated Hospitals							
Jefferson Davis Hospital	Houston, Texas	A. S. Keats	4,728	2,539	3	6	...
Methodist Hospital [1-3]	Houston, Texas	P. H. Chalmers	9,048	6,725	3	6	220
Veterans Admin. Hospital [1-3]	Houston, Texas	W. H. Mannheimer	4,531	1,204	3	5	270
Hermann Hospital [1-3]	Houston, Texas	L. F. Schuhmacher, Jr.	18,261	6,989	2	4	125
St. Joseph's Hospital [3]	Houston, Texas	E. A. Hoeflich	13,615	9,147	1	1	220
University of Texas M. D. Anderson Hospital							
and Tumor Institute [1-3]	Houston, Texas	W. S. Derrick	1,125	2,521	3	6	220
Scott and White Memorial Hospitals [1-3]	Temple, Texas	C. H. Gillespie	4,909	3,679	3	6	300
University of Utah College of Medicine							
Affiliated Hospitals [1-3-400]	Salt Lake City	C. M. Ballinger	20,867	16,427	6	13	275
University of Vermont Medical Center							
De Goesbriand Memorial Hospital [1-3]	Burlington, Vt.	E. Mills	3,210	1,858	2	5	100
Mary Fletcher Hospital [1-3]	Burlington, Vt.	J. Abajian, Jr.	4,125	1,352	2	5	250
Veterans Admin. Hospital [1-3]	White River Jct., Vt.	R. E. Lapointe	1,320	527	1	2	218
University of Virginia Hospital [1-3]	Charlottesville, Va.	D. E. Eastwood	5,035	1,121	3	5	175
Medical College of Virginia—Hospital Division [1-3]	Richmond, Va.	W. E. Pembleton	14,859	5,100	2	5	200
Veterans Admin. Hospital [1-3]	Richmond, Va.	C. G. Lynch	4,129	905	1	2	271
Doctors Hospital [1-3]	Seattle	J. J. Owen	5,234	4,551	1	2	250
Swedish Hospital [1-3]	Seattle	L. H. Mousel	12,910	4,912	2	4	225
University of Washington Affiliated Hospitals							
Children's Orthopedic Hospital	Seattle	K. Eather	3,673	...	..	2	180
King County Hospital Unit No. 1 (Harborview) [1-3]	Seattle	L. E. Morris	3,431	2,504	6	16	150
Veterans Admin. Hospital [1-3]	Seattle	L. E. Morris	1,384	331	1	2	271
Virginia Mason Hospital [1-3]	Seattle	D. C. Moore	7,037	2,530	3	6	175
Tacoma General Hospital [1-3]	Tacoma, Wash.	J. J. Bonica	6,604	3,104	4	8	200
Ohio Valley General Hospital [1-3]	Wheeling, W. Va.	D. E. Greeneltch	6,525	4,562	3	6	300
University Hospitals [1-3]	Madison, Wis.	O. S. Orth	5,751	4,812	6	14	100
Veterans Admin. Hospital [1-3]	Milwaukee, (Wood), Wis.	S. W. Gorens	3,774	2,014	3	3	271

Numerical and other references will be found on pages 788 through 790.

3. AVIATION MEDICINE

The programs in Aviation Medicine which have been approved by the Council and the American Board of Preventive Medicine, through the Residency Review Committee for Preventive Medicine, will be found listed under Preventive Medicine, page 760.

4. CARDIOVASCULAR DISEASE

Residency programs in the following hospitals have been approved for ONE to TWO years of training by the Council and the Subspecialty Board for Cardiovascular Disease of the American Board of Internal Medicine.

Hospitals, 66; Residencies, 154

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
UNITED STATES ARMY							
Letterman Army Hospital [1-3]	San Francisco	L. F. Parmley, Jr.	592	20	1	1	...
Fitzsimons Army Hospital [1-3]	Denver	B. E. Pollock	298	14	1	1	...
Army Medical Center [1-3]		T. W. Inmon	532	34	2	3	...
Brooke Army Hospital [1-3]		R. B. Dickerson	682	74	2	2	...
UNITED STATES NAVY							
U. S. Naval Hospital [1]	San Diego, Calif.	J. E. Gorman	1,024	129	1	1	...
U. S. Naval Hospital [1-3]	Bethesda, Md.	J. B. MacGregor	709	...	1	1	...
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE							
Freedmen's Hospital [1-3]	Washington, D. C.	J. B. Johnson	687	...	1	3	308
NONFEDERAL AND VETERANS ADMINISTRATION							
City of Hope Medical Center	Duarte, Calif.		...	...	..	..	...
Veterans Admin. Hospital [1-3]	Long Beach, Calif.	D. W. Leik	489	65	..	2	347
Los Angeles County Hospital	Los Angeles		...	...	..	..	...
Veterans Adm	Los Angeles		947	94	..	3	347
University of	San Francisco		Incl. in Int. Med.		..	1	231
General Rose Memorial Hospital	Denver		...	...	..	..	...
Veterans Admin. Hospital [1-3]	West Haven, Conn.	M. Calabresi	Incl. in Int. Med.		1	1	254
Delaware Hospital	Wilmington, Del.	J. R. Durham	..	...	..	..	...
George W	ashington, D. C.	J. M. Evans	713	42	3	6	200
Jackson M	Miami, Fla.	R. J. Boucek	1,444	...	4	10	225
St. Joseph's Infirmary [1-3]	Atlanta, Ga.	T. S. Claiborne	689	42	..	1	300
Emory University Hospital	Emory University, Ga.	R. B. Logue	642	38	..	3	255
Children's Memorial Hospital [1-3]	Chicago	R. A. Miller	413	17	2	2	...
Michael Reese Hospital [1-3]	Chicago	L. N. Katz	1,142	65	5	10	125
Mount Sinai Hospital [1-3]	Chicago	A. A. Luisada	Incl. in Int. Med.		..	1	225
Marion County General Hospital [1-3]	Indianapolis	K. G. Kohlstaedt	303	27	..	2	300
St. Vincent's Hospital	Indianapolis		...	..	..	..	...
University of Kansas Medical Center [1-3]	Kansas City, Kan.	E. G. Dimond	435	15	..	6	125
Maine Medical Center [1-3]	Portland, Maine	R. Martin	Incl. in Int. Med.		1	1	150
Beth Israel Hospital [1-3]	Boston	P. M. Zoll	Incl. in Int. Med.		..	2	167
Peter Bent Brigham Hospital [1-3]	Boston		Incl. in Int. Med.		..	8	...
Veterans Admin. Hospital [1-3]	West Roxbury, Mass.		122	3	..	2	393
Henry Ford Hospital [1-3]	Detroit		1,425	66	3	4	265
Mayo Foundation	Rochester, Minn.		Incl. in Int. Med.		..	..	...
University of Nebraska Hospital [1-3]	Omaha, Neb.	R. L. Grissom	Incl. in Int. Med.		..	2	200
Newark Beth Israel Hospital [1-3]	Newark, N. J.						
Bergen Pines County Hospital [1-3]	Paramus, N. J.	S. B. Reich	549	85	1	1	350
Jewish Hospital [1-3]	Brooklyn, N. Y.	J.	Incl. in Int. Med.		..	1	125
Buffalo General Hospital [1-3]	Buffalo	E.	Incl. in Int. Med.		1	1	200
Irvington House [1-3]	Irvington, N. Y.	A. C	237	...	..	6	...
Lenox Hill Hospital [1-3]	New York City	C. E. Kossmann	722	29	..	2	300
Memorial Ce		J. S. La Due	400	...	..	2	300
James Ewi			...	...	..	..	...
Memorial Hospital			...	...	..	..	...
Mount Sinai Hospital [1-3]	New York City	C. K. Friedberg	1,607	75	2	6	75
St. Luke's Hospital [1-3]	New York City	T. B. Van Itallie	Incl. in Int. Med.		2	2	150
St. Francis Hospital and Sanatorium [1-3]	Roslyn, N. Y.	W. J. Noble	577	19	5	5	250
Grasslands Hospital [1-3]	Valhalla, N. Y.	H. Tarnower	...	26	..	1	225
Duke Hospital [1-3]	Durham, N. C.	E. S. Orgain	446	11	..	2	300
University of Cincinnati College of Medicine Hospital Group							
Cincinnati General Hospital [1-3]	Cincinnati	J. McGuire	Incl. in Int. Med.		..	..	...
St. Mary's Hospital [1-3]	Cincinnati	R. S. Green	Incl. in Int. Med.		2	2	300
Cleveland Clinic Hospital [1-3]	Cleveland	A. C. Ernstene	1,587	85	..	6	275
University Hospitals [1-3]	Cleveland	W. Pritchard	Incl. in Int. Med.		..	2	...
Ohio State University Hospitals							
University Hospitals [1-3]	Columbus, Ohio	J. M. Ryan	Incl. in Int. Med.		..	2	252
White Cross Hospital [1-3]	Columbus, Ohio	R. W. Kissane	179	7	1	1	290
University of Oklahoma		S. Wolf	...	...	..	..	...
University Hospital [1-			Incl. in Int. Med.		..	..	...
Veterans Admin. Hospi			...	...	..	..	...
Veterans Admin. Hospit		B. M. Parker	630	52	..	2	270
Graduate Hospital of the							
University of Pennsylvania [1-3]	Philadelphia	S. Bellet	200	4	1	1	100
Hahnemann Medical College and Hospital [1-3]	Philadelphia						
Pennsylvania Hospital [1-3]	Philadelphia	J. B. Vander Veer	Incl. in Int. Med.		1	2	20
Philadelphia General Hospital [1-3]	Philadelphia	S. Bellet	Incl. in Int. Med.		6	15	121
Presbyterian Hospital [1-3]	Philadelphia	J. R. Kitchell	191	9	1	1	175
Temple University Hospital [1-3]	Philadelphia		...	...	..	..	...
Veterans Admin. Hospital [1-3]	Philadelphia	B. H. Pastor	1,199	100	..	1	270
Health Center Hospitals of the University of cine [1-3]	Pittsburgh	J. D. Myers	Incl. in Int. Med.		..	..	...
St and [3]	Pittsburgh	A. P. D'Zmura	495	20	..	1	240
M	Providence, R. I.	A. M. Burgess, Sr.	...	...	..	..	...
Rhode Island Hospital [1-3]	Providence, R. I.	F. B. Cutts	7,594	...	2	2	175
University of Texas Medical Branch Hospitals [1-3]	Galveston, Texas	G. R. Herrmann	Incl. in Int. Med.		3	3	160
Veterans Admin. Hospital [1-3]	Richmond, Va.	W. T. Thompson, Jr.	809	72	..	2	271
University Hospitals [1-3]	Madison, Wis.	C. W. Crumpton	Incl. in Int. Med.		3	3	200

Numerical and other references will be found on pages 788 through 790.

5. DERMATOLOGY

Residency programs in the following hospitals have been approved by the Council and the American Board of Dermatology, Inc., through the Residency Review Committee for Dermatology, as offering acceptable training in the specialty.

Hospitals, 78; Residencies, 333

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES ARMY								
Letterman Army Hospital [1-3]	San Francisco	R. M. Williams	78	10,507	1	3	3	...
Army Medical Center [1-3]	Washington, D. C.	R. S. Higdon	253	12,973	4	12	3	...
Brooke Army Hospital [1-3]	San Antonio, Texas	G. Prazak	106	11,402	3	9	3	...
UNITED STATES NAVY								
U. S. Naval Hospital [1-427]	San Diego, Calif.	C. W. Norman	272	14,142	2	6	2	...
U. S. Naval Hospital [1-432]	Philadelphia	J. H. Lockwood	176	6,978	2	6	2	...
UNITED STATES PUBLIC HEALTH SERVICE								
U. S. Public Health Service Hospital [1-3-280]	Stapleton, S. I., N. Y.	J. T. Hearin	513	8,559	1	3	3	...
NONFEDERAL AND VETERANS ADMINISTRATION								
University of Alabama Medical Center								
University Hospital and Hillman Clinic [1-3]	Birmingham, Ala.	R. O. Noojin	53	1,761	1	4	3	143
Lloyd Nolan Hospital [1-3-70]	*Fairfield, Ala.*	*P. G. Reque*	78	5,898	1	1	1	250
University of Arkansas Medical Center			...	...	..	..	1	...
University Hospital	Little Rock, Ark	C. J Dillaha	...	839	..	..	..	...
Veterans Admin. Hospital	Little Rock, Ark.	G. T. Jansen	...	...	..	..	..	...
Veterans Admin. Hospital [1-3]	Long Beach, Calif.	S. W. Becker	291	4,215	2	6	3	271
Los Angeles County Hospital [1]	Los Angeles	A. K. Jensen, J. R. Scholtz	734	13,333	2	5	3	250
University of California Hospital [1-3]	Los Angeles	T. H. Sternberg	66	1,915	2	5	3	229
Veterans Admin. Hospital [1-3-98]	Los Angeles	E. T. Wright	752	15,027	3	7	3	270
White Memorial Hospital [1-3]	Los Angeles	M. Couperus	16	4,095	1	2	2	215
Stanford Medical Center and Associated Hospitals [1-3]		E. M. Farber	...	...	2	5	3	175
Palo Alto-Stanford Hospital Center	Palo Alto, Calif.		...	...	..	..	..	...
Veterans Admin. Hospital	Palo Alto, Calif.		...	...	..	...	..	...
University of California Hospitals [1]	San Francisco	R. B Rees	64	7,288	1	4	3	231
University of Colorado Medical Center								
Colorado General Hospital [1-3]	Denver	A R Woodburne	10	897	1	2	3	180
Grace-New Haven Community Hospital [1-3]	New Haven, Conn.	A. B. Lerner	225	3,791	1	2	3	50
Jackson Memorial Hospital [1-3]	*Miami, Fla.*	*H. Blank*	45	5,083	3	7	3	200
Cook County Hospital	Chicago	S. M. Bluefarb	471	15,766	2	4	3	140
Northwestern University Medical Center [1-3]	Chicago	H. Rattner	166	5,723	2	6	3	200
Veterans Admin. Research Hospital	Chicago		...	...	..	..	..	...
University of Chicago Clinics [1-3]	Chicago	S Rothman	207	7,862	3	9	3	200
University of Illinois Research and Educational Hospitals [1-3]	Chicago	A. Rostenberg, Jr.	46	11,330	1	2	3	145
Veterans Admin. Hospital [1-3]	Hines, Ill.	A. Rostenberg	664	.....	2	2	1	270
Marion County General Hospital [1-3]	Indianapolis	J. E. Dalton	54	5,657	1	3	3	210
State University of Iowa Hospitals [1-3]	Iowa City	R. Nomland	414	15,730	1	3	3	175
Charity Hospital of Louisiana [1]	New Orleans	J. W Burks, Jr., V. M. Henington, C. B. Kennedy	486	22,041	5	11	3	100
Johns Hopkins Hospital [1-3]	Baltimore	M. Sullivan	203	4,900	..	..	3	25
University Hospital	Baltimore		...	.....	..	..	3	...
Veterans Admin. Hospital [1-3-185]	Fort Howard, Md.	M. Sullivan	56	1,180	1	2	3	271
Boston City Hospital [1]	*Boston*	B. Appel	98	14,521	2	4	3	132
Massachusetts General Hospital [1-3]	Boston	T. B. Fitzpatrick	289	8,393	..	..	3	67
Massachusetts Memorial Hospitals [1-3]	Boston	H. Mescon	...	1,893	2	6	3	175
University Hospital [1-3-215]	Ann Arbor, Mich.	A. C. Curtis	691	5,760	5	15	3	160
Henry Ford Hospital [1-3]	Detroit	C. S Livingood	430	40,880	4	12	3	265
Receiving Hospital [1-3-126]	Detroit	H Pinkus	21	9,606	2	7	3	303
Minneapolis General Hospital [1-3]	Minneapolis	C. W. Laymon	181	4,498	1	2	3	220
University of Minnesota Hospitals [1-3]	Minneapolis	F. W. Lynch	125	3,695	2	5	3	220
Veterans Admin. Hospital [1-3-228]	Minneapolis	F. W. Lynch	453	.....	2	4	3	271
Mayo Foundation [1]	Rochester, Minn	L. A. Brunsting	752	28,406	5	15	3	175
Ancker Hospital [1-3]	St. Paul	H. Ravits	134	3,201	..	1	3	220
Barnes Hospital [1-3]	St Louis	H. N Eisen, C. Lane	...	5,870	1	2	3	50
Mary Hitchcock Memorial Hospital [1-3]	Hanover, N. H.		161	5,156	1	3	3	218
Kings County Hospital [1-3]	Brooklyn, N. Y		264	8,503	2	2	1	125
Edward J. Meyer Memorial Hospital [1-3-268]	Buffalo	E. D. Osborne	124	5,418	2	4	3	247
Roswell Park Memorial Institute [1-3]	Buffalo	H. L Traenkle	67	3,535	..	1	1	318
Bellevue Hospital Center								
Div. IV New York University Post-Graduate Medical School [1-3]	New York City	M. B. Sulzberger	375	21,012	3	7	3	125
Mount Sinai Hospital [1-3]	New York City	S. M. Peck	23	6,851	1	2	3	75
New York Hospital [1-3]	New York City	G. Lewis	...	9,876	1	1	3	164
New York University—Bellevue Medical Center								
University Hospital [1-3]	New York City	M. B. Sulzberger	151	70,947	5	6	3	105
Presbyterian Hospital [1]	New York City	C. T Nelson	971	32,915	2	4	3	250
St. Luke's Hospital [1-3]	New York City	L. P. Barker	Incl. in Int. Med.	7,779	1	2	3	100
Veterans Admin. Hospital (Bronx) [1-3]	New York City	H. Shatin	479	.....	..	4	3	271
Veterans Admin. Hospital (Manhattan) [1-3]	New York City	P. Michaelides	399	.....	..	6	3	271
North Carolina Memorial Hospital	Chapel Hill, N. C.	J. M. Hitch	38	2,561	..	..	2	...
Duke Hospital [1-3]	*Durham, N. C.*	*J. L. Calloway*	*180*	1,727	3	6	3	102
University of Cincinnati College of Medicine Hospital Group								
Cincinnati General Hospital [1-3]	Cincinnati	L. Goldman	297	3,930	2	7	3	100
Cleveland Clinic Hospital [1-3]	Cleveland	J. R. Haserick	343	13,922	2	5	3	235
Cleveland Metropolitan General Hospital [1-3]	Cleveland	R. C. Rauschkolb	91	5,892	1	3	3	150
University Hospitals [1-3]	Cleveland	R. Stoughton	91	4,986	1	3	3	125
University of Oklahoma Medical Center								
University Hospital [1-3]	Oklahoma City	J. H. Lamb	41	2,197	2	4	3	200
Veterans Admin. Hospital [1]	Oklahoma City	H. A. Foerster	58	664	..	..	..	271
University of Oregon Medical School Hospitals and Clinics [1-3]	Portland, Ore.	W. C Lobitz, Jr.	134	6,796	1	3	3	125
Geo. F. Geisinger Memorial Hospital [1-3]	Danville, Pa.	R. F. Dickey	56	11,137	1	3	3	175
Graduate Hospital of the University of Pennsylvania [1-3]	Philadelphia	H. Beerman	31	2,083	2	2	3	100

Numerical and other references will be found on pages 788 through 790.

5. DERMATOLOGY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered[8]	Total Residencies Offered[8]	Length of Approved Program (Years)	Beginning Stipend (Month)
Hahnemann Medical College and Hospital [1-3]	Philadelphia	H. J. Hurley	1,591	.....	1	1	1	75
Hospital of the University of Pennsylvania [1-3]	Philadelphia	D. Pillsbury	123	5,092	1	15	3	125
Jefferson Medical College Hospital [1-3]	Philadelphia	H. A. Luscombe	11	3,532	1	2	2	100
Temple University Medical Center Skin and Cancer Hospital Unit [1-3]	Philadelphia	C. F. Burgoon, Jr.	521	21,898	3	9	3	100
University of Texas Medical Branch Hospitals [1-3]	Galveston, Texas	J. F. Mullins	129	6,584	2	6	3	160
Baylor University College of Medicine Affiliated Hospitals [1-3-410]		E. R. Seale	187	1,315	2	6	3	...
University of Virginia Hospital [1-3]	Charlottesville, Va.	E. P. Cawley	171	8,261	2	6	3	75
Medical College of Virginia Hospital [1-3]	Richmond, Va	A. Pepple	Incl. in Int. Med.	2,412	1	1	2	125
University Hospitals [1-3]	Madison, Wis.	S. A. M. Johnson	156	1,380	1	1	3	100
Marshfield Clinic	Marshfield, Wis.	S. Epstein	312	8,000	..	..	..	...
Veterans Admin. Hospital [1-3-402]	Milwaukee (Wood) Wis.	D. W. Kersting	263	7,556	1	3	3	271

6. GASTROENTEROLOGY

Residency programs in the following hospitals have been approved for ONE to TWO years of training by the Council and the Subspecialty Board for Gastroenterology of the American Board of Internal Medicine.

Hospitals, 38; Residencies, 80

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered[8]	Total Residencies Offered[8]	Beginning Stipend (Month)
UNITED STATES AIR FORCE							
U. S. Air Force Hospital	San Antonio, Texas	....	.....	..	..	..	...
UNITED STATES ARMY							
Letterman Army Hospital [1-3]	San Francisco	E. L. Kehoe	335	3	1	1	...
Army Medical Center [1-3]	Washington, D. C.	B. H. Sullivan	298	9	2	2	...
NONFEDERAL AND VETERANS ADMINISTRATION							
Veterans Admin. Hospital [1-3]	Long Beach, Calif.	S. J. Stemplen	485	27	..	2	347
Veterans Admin. Hospital [1-3]	Los Angeles	M. I. Grossman	867	43	..	2	347
University of California Hospitals [1]	San Francisco	P. L. Althausen	Incl. in Int. Med.		..	..	...
Veterans Admin. Hospital [1-3-35]	West Haven, Conn.	....	Incl. in Int. Med.		3	5	254
Cook County Hospital	Chicago	F. Steigmann	.....	..	2	2	140
Veterans Admin. Research Hospital [1-3]	Chicago	E. C. Texter	447	16	..	3	271
Marion County General Hospital [1-3]	Indianapolis	B. Rosenak	250	12	..	1	300
University of Kansas Medical Center [1-3]	Kansas City, Kan.	A. Klotz	234	11	2	4	125
Ochsner Foundation Hospital [1-3]	New Orleans	W. D. Davis	437	11	1	1	300
Touro Infirmary [1]	New Orleans	M. Kaplan	931	5	1	2	125
Beth Israel Hospital [1-3]	Boston	L. Zetzel	Incl. in Int. Med.		1	1	167
Lahey Clinic [1-3]	Boston	E. D. Kiefer	3,059	1	8	8	200
Massachusetts Memorial Hospitals [1-3]	Boston	F. Ingelfinger	Incl. in Int. Med.		2	4	175
University Hospital [1-3]	Ann Arbor, Mich.	H. M. Pollard	Incl. in Int. Med.		2	5	195
Henry Ford Hospital [1-3]	Detroit	J. G. Mateer	1,157	22	3	3	265
Mayo Foundation [1]	Rochester, Minn.	....	Incl. in Int. Med.		..	..	...
Jewish Hospital [1-3]	Brooklyn	M. Matzner	Incl. in Int. Med.		..	1	125
Kings County Hospital	Brooklyn	....	.....	..	..	..	...
Veterans Admin. Hospital [1-3]	Brooklyn	J. Gabriel	140	6	1	1	347
Mount Sinai Hospital [1-3]	New York City	H. D. Janowitz	1,270	24	4	5	75
New York Polyclinic Medical School and Hospital [1-3]	New York City	I. A. Feder	156	1	1	1	125
Duke Hospital [1-3]	Durham, N. C.	J. M. Ruffin	334	..	..	3	250
North Carolina Baptist Hospital [1-3]	Winston-Salem, N. C.	D. Cayer	1,200	..	3	3	300
Cincinnati General Hospital [1-3]	Cincinnati	L. Schiff	Incl. in Int. Med.		..	..	...
Cleveland Clinic Hospital [1-3]	Cleveland	E. N. Collins	591	25	..	1	310
Veterans. Admin. Hospital [1-3-331]	Cleveland	H. P. Roth	678	35	1	2	271
Ohio State University Hospitals University Hospitals [1-3]	Columbus, Ohio	C. J. De Lor	477	..	..	1	252
Veterans Admin. Hospital [1-3]	Portland, Ore.	M. C. Goldman	438	8	..	1	270
Graduate Hospital of the University of Pennsylvania [1-3]	Philadelphia	H. L. Bockus	874	29	2	2	150
Hospital of the University of Pennsylvania [1-3]	Philadelphia	T. Machella	Incl. in Int. Med.		2	6	...
Jefferson Medical College Hospital [1-3]	Philadelphia	W. A. Sodeman	177	..	1	1	100
Temple University Hospital [1-3]	Philadelphia	H. Shay	Incl. in Int. Med.		2	2	...
Veterans Admin. Hospital [1-3]	Memphis	M. L. Gompertz	1,043	25	1	1	271
Veterans Admin. Hospital [1-3]	Richmond, Va.	W. T. Thompson, Jr.	754	13	..	2	271
Veterans Admin. Hospital [1-3]	Milwaukee (Wood)	J. J. Levin	749	44	1	1	347

7. GENERAL PRACTICE

Residency programs in the following hospitals have been approved by the Council and the American Academy of General Practice, through the Residency Review Committee for General Practice, as offering acceptable training in this field.

Hospitals, 203; Residencies, 832

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered[8]	Total Residencies Offered[8]	Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES AIR FORCE								
U. S. Air Force Hospital	Montgomery, Ala.	J. A Jernigan	1,585	23	4	12	2	...
U. S. Air Force Hospital	Keesler Air Force Base, Biloxi, Miss.	....	.....	..	..	..	2	...
U. S. Air Force Hospital	Wright-Patterson Air Force Base, Dayton Ohio	....	.....	..	..	..	2	...
U. S. Air Force Hospital	San Antonio, Texas	....	.....	..	..	..	2	...
UNITED STATES ARMY								
U. S. Army Hospital	Fort Knox, Ky.	J. J. McNerney	11,405	48	8	16	2	...

Numerical and other references will be found on pages 788 through 790.

7. GENERAL PRACTICE—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES NAVY								
U. S. Naval Hospital [1-3]	Oakland, Calif.	M. L. Gerber	4,185	59	1	2	2	...
U. S. Naval Hospital [1]	San Diego, Calif.	R. L. Ware	.....	..	1	2	2	...
UNITED STATES PUBLIC HEALTH SERVICE								
U. S. Public Health Service Hospital [1-3]	Detroit	N. J. Galluzzi, A. R. Valle	2,570	14	3	6	2	...
U. S. Public Health Service Hospital [1]	Norfolk, Va.	F. T. Zinn	3,700	47	3	6	2	...
NONFEDERAL AND VETERANS ADMINISTRATION								
Carraway Methodist Hospital [1]	Birmingham, Ala.	C. Neville	.....	..	1	2	2	250
Good Samaritan Hospital [1]	Phoenix, Ariz.	R. McCulley	6,849	42	2	2	2	300
Maricopa County General Hospital [1-3]	Phoenix, Ariz.	H. M. Bunch	1,087	109	6	12	2	300
St. Mary's Hospital [1-3]	Tucson, Ariz.	F. A. Shallenberger	.....	..	2	2	2	200
University of Arkansas Medical Center [1-41]	Little Rock, Ark.	J. T. Riggin, Jr.	.....	..	12	24	2	150
St. Michael's Hospital [1-3]	Texarkana, Ark.	R. J. Schneble	7,552	31	1	1	2	250
General Hospital of Riverside County [1]	Arlington, Calif.		3,528	51	6	6	2	444
Kern County General Hospital [1-3]	Bakersfield, Calif.	R. T. Cunningham	.....	..	1	1	2	350
St. Mary's Long Beach Hospital [3]	Long Beach, Calif.	W. L. Thompson	18,405	125	6	6	2	270
Contra Costa County Hospital [1-3]	Martinez, Calif.		.....	..	10	10	2	470
Stanislaus County Hospital [1-3]	Modesto, Calif.	R. S. Westphal	5,320	90	4	9	2	500
Kaiser Foundation Hospital	Oakland, Calif.		.....	..	..	..	2	...
Sacramento County Hospital [1-3]	Sacramento, Calif.	D. M. Ernest	14,722	510	6	12	2	300
Monterey County Hospital [1]	Salinas, Calif.	W. A. Cassidy	4,012	152	9	9	2	500
Santa Barbara General Hospital	Santa Barbara, Calif.	W. T. Robbins	2,653	62	3	5	2	450
Sonoma County Hospital [1]	Santa Rosa, Calif.	H. D. Stailey	4,020	105	4	8	2	425
County [1]	Ventura, Calif.	J. A. Daly	4,939	75	5	10	2	434
	Boulder, Colo.	W. W. Bock	4,739	35	1	2	2	200
	Colorado Springs, Colo.	E. B. Liddle	333	21	2	4	2	200
	Colorado Springs, Colo.	R. W. Urich	8,634	91	2	2	1	200
Mercy Hospital [1-3]	Denver		.....	..	..	..	2	...
St. Joseph's Hospital [1-3]	Denver	R. J. Zarlengo	.....	..	1	2	2	200
University of Colorado Medical Center								
Colorado General Hospital [1-3]	Denver	C. W. Eisele	.....	..	8	18	2	180
Denver General Hospital [1-3]	Denver	C. W. Eisele	.....	..	..	..	2	179
St. Mary's-Corwin Hospital [1-3]	Pueblo, Colo.	F. W. Barrows	13,050	80	4	8	2	285
Bridgeport Hospital [1-3]	Bridgeport, Conn.	E. R. Connors	.....	..	1	2	2	240
Charlotte Hungerford Hospital [1-3]	Torrington, Conn.	M. E. Globbe	1,272	42	4	4	2	200
Wilmington General Hospital [1-3]	Wilmington, Del.	E. Resnick	7,452	46	12	12	2	200
Halifax District Hospital [3]	Daytona Beach, Fla.	H. A. King	10,650	111	..	5	2	320
Baptist Memorial Hospital [1-3]	Jasksonville, Fla.	A. M. Manson	.....	..	3	6	2	325
St. Luke's Hospital [1-3]	Jacksonville, Fla.	E. E. Leitner	.....	..	2	2	2	325
St. Vincent's Hospital [1-3]	Jacksonville, Fla.	L. M. Wachtel	Incl. in Int. Med.		2	4	2	325
Baptist Hospital [1-3]	Pensacola, Fla.		.....	..	15	15	2	225
Sacred Heart Hospital [1-3]	Pensacola, Fla.	R. E. Dalrymple	.....	..	3	3	2	225
Mound Park Hospital [1]	St. Petersburg, Fla.	E. B. Campbell, Sr.	4,514	171	1	1	2	290
Medical Center [1-3]	Columbus, Ga.	E. B. Horn	11,918	378	2	4	1	250
John L. Hutcheson Memorial								
Tri-County Hospital [1]	Fort Oglethorpe, Ga.	F. H. Simonton	6,146	43	3	6	2	350
Macon Hospital [1]	Macon, Ga.	J. Daniel	.....	...	4	6	2	250
Mac Neal Memorial Hospital [1-3]	Berwyn, Ill.	O. C. Koluvek	1,880	102	6	6	2	350
Grant Hospital [1-3]	Chicago	R. Mandel	.....	...	1	2	2	225
Illinois Masonic Hospital [1-3]	Chicago	J. S. Poticha	5,248	60	1	1	2	115
Louis A. Weiss Memorial [1-3]	Chicago	H. E. Bessinger	7,040	63	6	10	2	385
St. Mary of Nazareth Hospital [1-3]	Chicago	S. A. *Motto*	*10,717*	*120*	*1*	2	2	225
South Shore Hospital [1-3]	Chicago	S. H. Gumbiner	7,626	84	2	2	1	300
Decatur and Macon Coun	Ill.	W. L. *Terrell*	*6,064*	*68*	2	2	1	275
Methodist Hospital of Ce	Ill.	H. Johnson	2,999	91	4	4	1	200
Methodist Hospital [1]	Indianapolis	D. Hampshire	9,992	...	1	2	2	278
Broadlawns-Polk County Hospital [1]	Des Moines, Iowa	V. L. Schlaser	.....	...	2	2	2	225
St. Francis Hospital [1-3]	Wichita, Kan.	V. D. Schwartz	.....	...	2	4	2	...
Wesley Hospital [1-3]	Wichita, Kan.	J. Tiller	5,409	...	1	2	2	295
Wm. Booth Memorial Hospital [1-3]	Covington, Ky.	C. W. Air	1,117	26	..	..	2	...
Cen	Lexington, Ky.	C. G. McLean	.....	..	4	8	2	250
Laf	Lafayette, La.	E. Hull	Incl. in Int. Med.		25	25	1	375
St.	Lake Charles, La.	V. A. McCann	8,160	40	2	4	2	250
E. A. Conway Memorial Hospital [1-3]	Monroe, La.	M. Raphael	8,785	85	10	15	2	400
Touro Infirmary [1]	New Orleans	R. P. Morrow	.....	...	1	2	2	125
Huey P. Long Charity Hospital	Pineville, La.	M. Honigman	8,620	161	14	14	1	375
Maine Medical Center [1-3]	Portland, Maine	S. R. Branson	.....	...	2	4	2	125
Bon Secours Hospital [3]	Baltimore	F. J. Geraghty	1,027	13	1	3	2	270
University Hospital	Baltimore		.....	...	..	..	2	...
Suburban Hospital [1-3]	Bethesda, Md	W. T. Joyce	2,276	...	2	5	2	175
New England Hospital [1-3]	Boston	R. A. Draper	.....	...	2	4	2	85
St. Anne's Hospital [3]	Fall River, Mass.	J. C. Corrigan	6,297	51	4	4	2	250
Worcester City Hospital [1-3]	Worcester, Mass.	J. Lundy	Incl. in Int. Med.		4	6	2	250
Oakwood Hospital [1-3]	Dearborn, Mich.	S. M. Gillespie	6.693	52	4	8	2	250
Evangelical Deaconess Hospital [1-3]	Detroit	W. P. Curtiss	1,978	101	1	2	2	307
Henry Ford Hospital [1-3]	Detroit	J. G. Mateer	11,084	432	2	4	2	265
Lynn Hospital [1-3]	Lincoln Park, Mich.	E. W. Erickson	3,238	26	6	12	2	500
Hurley Hospital [1-3]	Flint, Mich.	J. S. Schultz	.....	...	2	2	1	325
Mc Laren General Hospital [1]	Flint, Mich.	G. C. Cutler	3,388	36	3	6	2	375
St. Joseph Hospital [1]	Flint, Mich.	A. Judd	16,364	189	4	8	2	400
Borgess Hospital [1-3]	Kalamazoo, Mich.	F. M. Doyle	9,809	137	2	4	2	275
St. Joseph Mercy Hospital [1-3]	Pontiac, Mich.	H. Arnkoff	.....	...	4	4	2	375
Sidney A. Sumby Memorial Hospital	River Rouge, Mich.		.....	...	..	..	..	...
St. Mary's Hospital [3]	Saginaw, Mich.	T. E. Fleschner	5,340	70	1	2	2	400
Wyandotte General Hospital [1-3]	Wyandotte, Mich.	R. J. Deering	10,614	85	4	8	2	400
Fairview Hospital [1-3]	Minneapolis	F. S. Stiegler	15,157	153	..	8	2	300
Lutheran Deaconess Home and Hospital [1-3]	Minneapolis	B. Cohen	7,406	65	3	6	2	200
Midway Hospital [3]	St. Paul	A. E. Ritt	5,819	56	4	4	2	200
St. Luke's Hospital [1-3]	St. Paul	C. J. Mishek	7,787	71	4	8	2	200
Mississippi Baptist Hospital [1-3]	Jackson, Miss.	T. M. Davis	3,961	34	1	1	2	250
University Hospital [1-3]	Jackson, Miss.	L. F. Rittelmeyer, Jr.	.....	...	2	3	2	250
Mercy Hospital-Street Memorial [1-234]	Vicksburg, Miss.	T. H. Mitchell	2,953	26	1	2	1	225

Numerical and other references will be found on pages 788 through 790.

7. GENERAL PRACTICE—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered[5]	Total Residencies Offered[6]	Length of Approved Program (Years)	Beginning Stipend (Month)
University of Missouri Medical Center [1-3]	Columbia, Mo.	R. L. Pullen	Incl. in Int. Med.		2	4	2	200
Menorah Medical Center [1-3]	Kansas City, Mo.	E. L. Petry	.....	...	2	3	2	300
Missouri Methodist Hospital [1-3]	St. Joseph, Mo.	O. W. D. Craig	4,684	96	2	2	1	225
De Paul Hospital [1-3]	St. Louis	C. E. Martin	.....	...	2	2	2	200
Lutheran Hospital [1-3]	St. Louis	E. V. Henschel	6,421	103	3	6	2	200
St. Anthony's Hospital [1-3]	St. Louis	G. O'Sullivan	3,920	41	4	6	2	200
Immanuel Hospital [1-3]	Omaha, Neb.	C. M. Bonniwell	6,654	99	1	1	2	350
Hunterdon Medical Center [1-3]	Flemington, N. J.	E. D. Pellegrino	4,624	110	3	3	2	150
Mountainside Hospital [1-3]	Montclair, N. J.	F. H. Schurman	Incl. in Int. Med.		1	1	2	250
Princeton Hospital [1-3]	Princeton, N. J.	B. Scasserra	6,454	...	3	6	2	300
Somerset Hospital [1-3]	Somersville, N. J.	M. E. Tolomeo	11,080	127	1	2	2	225
Overlook Hospital [1-3]	Summit, N. J.	J. F. Johnston	12,163	...	1	2	1	200
Los Alamos Medical Center	Los Alamos, N. Mex.	....	.... .	...	..	..	2	...
Mercy Hospital [1-3]	Buffalo	C. F. Bannas	13,432	198	2	2	1	250
Millard Fillmore Hospital [1-3]	Buffalo	M. Cheplove	.....	...	1	2	2	285
Community Hospital [1-3]	Glen Cove, N. Y.	R. C. Parker	11,521	115	1	2	2	300
St. Mary's Hospital [1-3]	Rochester, N. Y.	C. De Sando	4,130	78	1	1	2	250
Yonkers General Hospital [1-3]	Yonkers, N. Y.	....	.....	...	..	..	2	...
North Carolina Memorial Hospital [1-3]	Chapel Hill, N. C.	C. H. Burnett	.....	...	3	3	2	175
Akron City Hospital [1-3]	Akron, Ohio	D. J. Roberts	.....	...	2	4	2	250
Akron General Hospital [1-3]	Akron, Ohio	H. A. Karam	.....	...	1	9	3	250
St. Thomas Hospital [1-3]	Akron, Ohio	M. F. Bossart	.....	...	2	4	2	250
Barberton Citizens Hospital [1-3]	Barberton, Ohio	A. A. Brown	14,530	90	3	6	2	250
Mercy Hospital [1-3]	Canton, Ohio	J. G. Hendershot	1,766	4	2	2	2	...
Christ Hospital [1-3]	Cincinnati	J. Lindner	.....	...	4	8	2	200
Good Samaritan Hospital [1-3]	Cincinnati	J. D. Marioni	.....	...	2	4	2	250
Fairview Park Hospital [1-3]	Cleveland	R. S. Maurer	.....	...	2	4	2	...
Polyclinic Hospital [1-3]	Cleveland	J. R. Heller	6,614	46	1	7	2	300
Woman's Hospital [1-3]	Cleveland	P. Coppedge	5,612	65	4	8	2	175
Doctors Hospital	Cleveland Heights, Ohio	....	.....	...	..	..	2	...
Mount Carmel Hospital [1-3]	Columbus, Ohio	J. L. Henry	1,029	53	2	3	2	275
St. Anthony's Hospital [1-3]	Columbus, Ohio	R. H. Kuhn	1,118	41	2	4	2	265
White Cross Hospital [1-3-336]	Columbus, Ohio	R. S. Young	1,546	30	1	1	2	290
Good Samaritan Hospital [1]	Dayton, Ohio	R. M. Kahn	16,698	131	2	4	2	285
Elyria Memorial Hospital [1-3]	Elyria, Ohio	J. Wherry	1,889	18	3	5	2	270
Lima Memorial Hospital [1-3]	Lima, Ohio	E. Murray	3,283	61	4	5	1	275
St. Rita's Hospital [1-3]	Lima, Ohio	J. A. Glorioso	2,161	62	1	2	2	325
Robinson Memorial Portage County Hospital [1-3]	Ravenna, Ohio	D. S. Palmstrom	7,116	87	6	12	2	250
Ohio Valley Hospital [3]	Steubenville, Ohio	C. Goll	10,405	88	1	2	2	300
Mercy Hospital [1-3]	Toledo, Ohio	J. C. Fries	1,347	71	1	2	2	275
St. Charles Hospital [1-3]	Toledo, Ohio	J. S. Kozy	10,680	109	2	4	2	325
St. Vincent's Hospital [1-3]	Toledo, Ohio	M. A. Schnitker	Incl. in Int. Med.		1	2	2	325
St. Joseph's Riverside Hospital [1-3]	Warren, Ohio	L. A. Loria	.....	...	4	7	2	300
Youngstown Hospital [1-3]	Youngstown, Ohio	J. L. Fisher	.....	...	1	2	2	325
University of Oklahoma Medical Center		I. Brown	.....	...	..	..	2	250
University Hospital [1-3-350]	Oklahoma City	....	.....	...	4	8	..	...
St. Vincent's Hospital [1-3]	Portland, Ore.	R. T. Childs	14,411	383	2	4	2	275
Altoona Hospital [1-3]	Altoona, Pa.	R. S. Magee	2,926	81	1	2	2	325
Lower Bucks County Hospital [1]	Bristol, Pa	....	....	...	..	..	2	...
Chester Hospital [1-3]	Chester, Pa.	H. Gold	11,344	260	2	4	2	350
Geo. F. Geisinger Memorial Hospital [1-3]	Danville, Pa.	J. A. Collins	.....	...	2	4	2	175
St. Vincent's Hospital [1-3]	Erie, Pa.	J. D. Weaver	.....	...	1	2	2	275
Lancaster General Hospital [1]	Lancaster, Pa.	....	.....	...	..	..	2	...
St. Joseph Hospital [1]	Lancaster, Pa.	....	.....	...	..	..	2	...
Montgomery Hospital [1-3]	Norristown, Pa.	S. C. Carfagno	8,442	125	2	2	1	400
Sacred Heart Hospital [1-3]	Norristown, Pa.	J. J. McCloon	2,346	38	4	5	1	350
St. Mary's Hospital [3]	Philadelphia	J. A. Daly	7,866	98	4	8	2	300
St. John's General Hospital [1-3]	Pittsburgh	....	.....	...	..	..	2	...
A. C. Milliken Hospital [3]	Pottsville, Pa.	N. M. Wall	5,445	68	3	6	2	400
Community General Hospital [1-3]	Reading, Pa.	C. S. Kring	.....	..	..	4	2	300
Sharon General Hospital	Sharon, Pa.		.....	..	..	..	2	...
Arecibo District Hospital [1-3]	Arecibo, P. R.	.	.....	..	..	..	2	...
Hospital Auxilio Muto [1-3]	Hato Rey, P. R.	..	3,520	15	2	4	2	...
Newport Hospital [1-3]	Newport, R. I.		.....	..	2	2	2	150
Memorial Hospital [1-3]	Pawtucket, R. I.	[illegible]	Incl. in Int. Med.		2	2	2	250
Woonsocket Hospital [1-3]	Woonsocket, R. I.	H. E. Gauthier	6,234	105	3	6	2	346
Greenville General Hospital [1-3]	Greenville, S. C.	W. Thames	7,391	137	2	3	2	275
Spartanburg General Hospital [1]	Spartanburg, S. C.	L. W. Luttrell	15,947	103	3	3	2	200
Sioux Valley Hospital [1-3]	Souix Falls, S. Dak.	R. E. Nelson	9,665	101	2	4	2	200
St. Mary's Memorial Hospital [3]	Knoxville, Tenn.	J. L. Raulston	14,019	107	1	2	2	250
University of Tennessee Memorial Research Center and Hospital [1]	Knoxville, Tenn.	J. H. Burkhart	1,105	27	3	3	2	320
Baptist Hospital [1-3]	Nashville, Tenn.	J. P. Lindsay	1,744	..	2	2	1	300
All Saints Episcopal Hospital [1-3]	Fort Worth, Texas	E Davenport	6,283	47	4	6	1	250
St. Mary's Infirmary [1]	Galveston, Texas	M. L. Ross	.....	..	4	8	2	400
Memorial Hospital [1-3]	Houston, Texas	P. J. Cecala	21,922	135	6	12	2	220
Baptist Memorial Hospital [1-3]	San Antonio, Texas	L. B. Jones	9,139	141	1	2	2	150
Robert B. Green Memorial Hospital [1-3]	San Antonio, Texas	L. B. Reppert	.....	..	1	2	2	150
Santa Rosa Hospital [1-3]	San Antonio, Texas	E. L. Mueller, Sr.	.....	..	1	2	2	200
Wichita General Hospital [1-3]	Wichita Falls, Texas	L. M. Theimer	11,473	58	..	4	1	300
St. Benedict's Hospital [1-3]	Ogden, Utah	L. D. Nelson	9,136	93	4	4	1	325
Thomas D. Dee Memorial Hospital [1]	Ogden, Utah	G. F. Kearns	12,829	187	3	5	2	300
Dr. Wm. H. Groves Latter-Day Saints Hospital	Salt Lake City	....	.....	...	..	..	2	...
Riverside Hospital [1-3]	Newport News, Va.	G. C. Amory	Incl. in Int. Med.		..	1	2	300
De Paul Hospital [1-3]	Norfolk, Va.	I. L. Hancock	.....	..	1	2	2	200
Norfolk Community Hospital [1-3]	Norfolk, Va.	G. H. Francis	4,185	62	2	4	2	250
Norfolk General Hospital [1-3]	Norfolk, Va.	G. H. Rector	.....	..	2	4	2	215
Portsmouth General Hospital	Portsmouth, Va.	....	.....	..	..	..	2	...
Retreat for the Sick	Richmond, Va.	....	.....	..	..	..	2	...
Louise Obici Memorial Hospital [1-3]	Suffolk, Va.	A. Taylor	.....	...	..	4	2	250
Providence Hospital [1-3]	Seattle	P. F. O'Hollaren	.....	..	4	4	1	300
Sacred Heart Hospital [1-3]	Spokane, Wash.	S. E. Shikany	26,983	221	1	2	1	250
St. Luke's Hospital [1-3]	Spokane, Wash.	B. A. Evans	483	10	1	1	2	250

Numerical and other references will be found on pages 788 through 790.

7. GENERAL PRACTICE—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
Bluefield Sanitarium [3]	Bluefield, W. Va.	J. R. Shanklin	2,370	36	4	4	1	400
Charleston General Hospital	Charleston, W. Va.	W. A. Thornhill, Jr.	Incl. in Int. Med.		..	..	2	225
Cabell Huntington Hospital [1-3]	Huntington, W. Va.	T. C. McFarland	.....	..	4	4	2	250
St. Joseph's Hospital [3]	Parkersburg, W. Va.	L. W. Hovis	3,104	46	1	1	2	300
Ohio Valley General Hospital [1-3]	Wheeling, W. Va.	G. L. Armbrecht	3,224	33	2	4	2	300
St. Francis Hospital [3]	La Crosse, Wis.	L. R. Schmidt	10,213	100	2	2	2	250
St. Mary's Hospital [1]	Madison, Wis.	G. J. Doros	2,877	32	1	2	2	250
Evangelical Deaconess Hospital [1-3]	Milwaukee	A. Hermann	6,461	79	1	2	2	250
Milwaukee County Hospital [1-3]	Milwaukee		.....	...	2	4	2	216
Milwaukee Hospital [1-3]	Milwaukee	E. R. Daniels	.....	..	..	..	1	270
St. Luke's Hospital [1-3]	Milwaukee	M. Landsberg	2,007	69	1	2	2	325
St. Michael Hospital [3]	Milwaukee	E. Kay	.....	..	3	8	2	275

8. INTERNAL MEDICINE

Residency programs in the following hospitals have been approved by the Council, the American Board of Internal Medicine, and the American College of Physicians through the Residency Review Committee for Internal Medicine, as offering acceptable training in the specialty under any of the several programs *leading to eligibility for examination by the American Board of Internal Medicine.*

Hospitals 5,744; Residencies, 607

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES AIR FORCE								
U. S. Air Force Hospital	San Antonio, Texas	P. G. Keil	9,977	32	7	21	3	...
UNITED STATES ARMY								
Letterman Army Hospital [1-3]	San Francisco	F. H. Mowrey	2,058	56	5	15	3	...
Fitzsimons Army Hospital [1-3]	Denver	B. E. Pollock	1,062	45	4	12	3	...
Army Medical Center [1-3]	Washington, D. C.	F. W. Pruitt	2,874	80	8	24	3	...
William Beaumont Army Hospital [1-3]	El Paso, Texas	R. C. Hunter, Jr.	4,732	46	2	6	3	...
Brooke Army Hospital [1-3]	San Antonio, Texas	D. J. Sheehan	4,928	91	8	24	3	...
Madigan Army Hospital [1-3]	Tacoma, Wash.	W. C. Berry	2,872	41	2	2	3	...
Tripler Army Hospital [1-3]	Honolulu, Hawaii	A. A. Biederman	4,697	66	5	15	3	...
U. S. NAVY								
U. S. Naval Hospital [1-3-25]	Oakland, Calif.	G. M. Davis	3,549	46	2	6	3	...
U. S. Naval Hospital [1]	San Diego, Calif.	J. E. Gorman	7,997	77	3	9	3	...
U. S. Naval Hospital [1-3]	Great Lakes, Ill.	G. M. Davis, Jr.	888	22	1	2	3	...
U. S. Naval Hospital [1-3]	Bethesda Md.	J. B. Mac Gregor	4,643	87	2	6	3	...
U. S. Naval Hospital [1-3]	Chelsea, Mass.	H. L. Jones, Jr.	2,463	27	2	6	3	...
U. S. Naval Hospital [1]	St. Albans, N. Y.	G. L. Calvy	1,518	31	2	6	3	...
U. S. Naval Hospital [1]	Philadelphia	J. S. Cowan	2,718	90	2	6	3	...
U. S. Naval Hospital [1-3]	Portsmouth, Va.	R. J. Whipple	4,568	70	3	9	3	...
UNITED STATES PUBLIC HEALTH SERVICE								
U. S. Public Health Service Hospital [1-3]	San Francisco	R. H. Linn	1,513	37	1	3	3	...
U. S. Public Health Service Hospital [1-3]	New Orleans	J. K. Irion	2,083	49	2	5	3	...
U. S. Public Health Service Hospital [1]	Baltimore	G. F. Ellinger	1,788	33	2	6	3	...
National Institutes of Health-Clinical Center [1-3]	Bethesda, Md.	L. Terry	848	61	..	12	1	...
U. S. Public Health Service Hospital [1-3]	Boston	D. J. Tenenberg	1,351	28	1	3	3	...
U. S. Public Health Service Hospital [1-3]	Stapleton, S. I., N. Y.	C. G. Spicknall	2,598	97	3	9	3	...
U. S. Public Health Service Hospital [1-3]	Seattle	W. H. Stimson	1,510	36	1	3	3	...
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE								
Freedmen's Hospital [1-3-384]	Washington, D. C.	J. B. Johnson	1,503	110	4	17	3	308
NONFEDERAL AND VETERANS ADMINISTRATION								
Carraway Methodist Hospital [1]	Birmingham, Ala.	O. C. McCarn	2,395	48	1	2	3	250
University of Alabama Medical Center			.....	..	..	..	3	...
University Hospital and Hillman Clinic [1-3]	Birmingham, Ala.	W. B. Frommeyer, Jr.	3,613	184	14	28	..	143
Veterans Admin. Hospital [1-3]	Birmingham, Ala.	E. E. Eddleman, Jr.	929	47	2	4	..	271
Lloyd Noland Hospital [1-3]	Fairfield, Ala.	C. E. Porter	3,264	53	2	6	3	250
Mobile County Hospital [1-3]	Mobile, Ala.	W. Atkinson	879	98	3	4	1	275
Veterans Admin. Hospital [1-3]	Tuskegee, Ala.	E. T. Odom	2,935	78	2	6	3	271
Maricopa County General Hospital [1-3]	Phoenix, Ariz.	M. H. Green	198	43	2	5	3	300
St. Joseph's Hospital [1-3]	Phoenix, Ariz.	B. P. Frissell	2,534	67	1	3	3	250
St. Mary's Hospital—Pima County General Hospital [1-3]	Tucson, Ariz.	C. A. Stephens	6,361	89	3	3	1	200
Tucson Medical Center [1-3]	Tucson, Ariz.	S. Sanger	2,512	77	2	2	1	200
University of Arkansas Medical Center [1]	Little Rock, Ark.	R. V. Ebert	1,402	90	4	14	3	243
Veterans Admin. Hospital [1-3-77]	Little Rock, Ark.	H. R. Hipp	3,711	161	5	6	3	270
General Hospital of Riverside County [1]	Arlington, Calif.		1,631	107	2	2	1	441
Kern County General Hospital [1-3]	Bakersfield, Calif.	C. E. Stilgenbauer	1,388	154	4	8	3	350
Herrick Memorial Hospital [1-3]	Berkeley, Calif.	H. I. Harvey	2,355	57	1	3	3	300
City of Hope Medical Center [1-3]	Duarte, Calif.	H. R. Bierman	356	104	1	3	1	400
General Hospital of Fresno County [1-3]	Fresno, Calif.	J. Radding	2,818	165	2	6	3	300
Glendale Sanitarium and Hospital [1-3]	Glendale, Calif.	D. John	5,086	139	1	4	3	325
Scripps Clinic and Research Foundation [1-3]	La Jolla, Calif.	E. L. Keeney	1,198	14	2	6	2	415
Seaside Memorial Hospital [1-3]	Long Beach, Calif.	J. R. Knutson	3,851	73	1	3	3	275
Veterans Admin. Hospital [1-3-82]	Long Beach, Calif.	D. W. Leik	1,676	207	7	20	3	271
Cedars of Lebanon Hospital [1-3]	Los Angeles	J. Reynolds, L. Gunther	4,808	152	3	9	3	265
Hospital of the Good Samaritan [1-3]	Los Angeles	J. L. Reynolds	4,750	124	2	6	3	275
Los Angeles County Hospital [1]	Los Angeles	W. Graf	28,712	1,388	16	47	3	259
Presbyterian Hospital—Olmsted Memorial [1-3]	Los Angeles	G. K. Wharton	3,057	74	1	1	1	200
Queen of Angels Hospital [1-3]	Los Angeles	R. Brotchner	3,425	110	3	3	3	275
St. Vincent's Hospital [3]	Los Angeles	E. W. Boland	2,657	36	1	1	1	330

Numerical and other references will be found on pages 788 through 790.

8. INTERNAL MEDICINE—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Length of Approved Program (Years)	Beginning Stipend (Month)
University of California Hospital [1-3]	Los Angeles	J. S. Lawrence	1,000	151	6	11	3	225
Veterans Admin. Hospital [1-3]	Los Angeles	L. Fred	5,325	413	20	54	3	270
White Memorial Hospital [1-3]	Los Angeles	V. J. Johns, Jr.	1,558	89	2	7	3	215
County Hospital [1-3]	Oakland, Calif.	K. W. Benson	5,353	255	6	14	3	200
al [1-3]	Oakland, Calif.	P. J. Raimondi	1,023	95	6	9	3	315
[3]	Oakland, Calif.	E. Movitt	3,271	227	3	9	3	270
ospital [1-3]	Orange, Calif.	R. W. Opfell	1,617	189	2	9	3	255
Stanford Medical Center and Associated Hospitals [1-3]		D. A. Rytand	....	...	12	25	3	175
Palo Alto-Stanford Hospital Center	Palo Alto, Calif.		....	...	..	..	..	...
Veterans Admin. Hospital	Palo Alto, Calif.		....	...	..	..	..	...
Collis P. and Howard Huntington Memorial Hospital [1-3]	Pasadena, Calif.	R. M. Shelton	2,818	134	1	3	3	300
San Bernardino County Charity Hospital	San Bernardino, Calif.	W. L. Cover	1,670	202	4	4	1	250
Mercy Hospital [1-3]	San Diego, Calif.	E. M. Fetter	2,804	99	1	3	3	225
San Diego County General Hospital [1]	San Diego, Calif.	I. H. Wilson	2,126	171	4	8	3	250
Children's Hospital [1-3]	San Francisco	P. M. Aggeler	1,618	30	2	5	2	175
French Hospital [1]	San Francisco	D. L. Wilbur	2,011	58	3	4	2	250
Kaiser Foundation Hospital [1-3]	San Francisco	C. C. Herbert	1,358	84	4	12	3	200
Mary's Help Hospital [1-3]	San Francisco	F. Rochex	1,690	45	..	..	1	225
Mount Zion Hospital [1-3]	San Francisco	J. J. Sampson	2,166	53	5	12	3	170
St. Luke's Hospital [1-3]	San Francisco	E. L. Bruck	3,009	67	3	6	3	325
St. Mary's Hospital [1-3]	San Francisco	J. J. McGinnis	2,400	100	3	6	3	200
San Francisco Hospital [1]	San Francisco	N. J. Sweet	1,909	207	9	13	3	220
University of California Service								
Southern Pacific General Hospital [1-3]	San Francisco	R. E. Allen	3,696	166	2	5	3	175
University of California Hospitals [1-103]	San Francisco	H. D. Brainerd	2,669	110	10	22	3	231
Veterans Admin. Hospital [1-3]	San Francisco	F. M. Willett	1,407	133	12	21	2	271
Santa Clara County Hospital	Calif.	J. M. Stone	1,418	232	3	7	3	240
Community Hospital of San	Calif.	W. F. Knorp	1,135	168	2	5	2	200
Santa Barbara Cottage Hosp	Calif.	T. K. Hill	3,019	87	3	6	3	200
Veterans Admin. Hospital [1]	Sepulveda, Calif.	R. Brawley	915	86	1	2	1	271
San Joaquin General Hospital [1]	Stockton, Calif.	L. P. Armanino	2,305	317	3	6	3	250
Harbor General Hospital [1]	Torrance, Calif.	W. Martin	4,054	287	8	21	3	259
Gorgas Hospital [1]	Ancon, C. Z.	J. R Vivas	2,714	46	2	5	..	300
Mercy Hospital [1-3]	Denver	A. Mutz	4,487	67	2	2	1	250
Presbyterian Hospital [1-3]	Denver	H. A. Bradford	1,741	61	1	3	2	275
St. Joseph's Hospital [1-3-119]	Denver	B. W. Yegge	3,229	67	2	5	3	200
St. Luke's Hospital [1]	Denver	M. G. Nims	4,014	162	1	2	2	225
University of Colorado Medical Center			.....	...	..	..	3	...
Colorado General Hospital [1-3]	Denver	G. Meiklejohn	1,413	187	8	31	..	180
Denver General Hospital [1-3]	Denver	G. Meiklejohn	3,301	337	..	..	..	179
Veterans Admin. Hospital [1-3]	Denver	T. P. Sears	2,458	176	9	21	3	254
Colorado State Hospital [1-3-120]	Pueblo, Colo.	G. R. Curless	1,586	210	6	12	2	415
St. Mary's-Corwin Hospital [1-3]	Pueblo, Colo.	R. H. Finney	5,013	52	2	2	1	285
Bridgeport Hospital [1-3]	Bridgeport, Conn.	D. B. Hardenbergh	3,676	108	2	4	2	240
St. Vincent's Hospital [1-3]	Bridgeport, Conn.	V. A. Lynch	3,112	95	1	3	3	200
Greenwich Hospital [1-3]	Greenwich, Conn.	J. Lockwood	2,118	97	2	3	2	150
Hartford Hospital [1-3]	Hartford, Conn.	M. O. Phelps	5,653	287	14	26	3	125
Hartford Municipal Hospital and Health Center [1-3]	Hartford, Conn.	W. F. Smith	755	53	1	2	2	255
St. Francis Hospital [1-3]	Hartford, Conn.	J. J. Moher	5,006	147	2	6	3	175
New Britain General Hospital [1-3]	New Britain, Conn.	J. C. White	2,566	115	1	3	3	210
Yale-New Haven Medical Center			.....	...	..	..	3	...
Grace-New Haven Community		P. B. Beeson, T. S. Evans	3,467	326	9	19	..	50
Veterans Admin. Hospital [1-3]		T. Amatruda	992	98	3	12	..	254
Hospital of St. Raphael [3-122]	New Haven, Conn.	T. S. Evans	1,910	150	4	8	3	150
Veterans Admin. Hospital [1-3]	Newington, Conn.	P. Lipton	1,210	87	6	9	3	270
Lawrence and Memorial Hospitals [1-3]	New London, Conn.	E. Gipstein	2,812	90	3	3	1	250
Norwalk Hospital [1-3]	Norwalk, Conn.		.....	...	..	..	1	...
St. Mary's Hospital [1-3]	Waterbury, Conn.	W. Finkelstein	2,073	66	2	5	3	225
Waterbury Hospital [1-3]	Waterbury, Conn.	O. J. Bizzozero	3,406	117	2	4	3	225
Delaware Hospital [1-3]	Wilmington, Del.	L. B. Flinn	2,396	161	2	5	3	220
Memorial Hospital [1-3]	Wilmington, Del.	L. P. Lang	2,155	124	2	4	3	225
Wilmington General Hospital [1-3]	Wilmington, Del.	C. Levy	1,580	47	2	2	1	260
District of Columbia General Hospital [1-3]	Washington, D. C.	L. Kyle, M. Romansky	5,172	424	20	26	3	233
Doctors Hospital [1-3]	Washington, D. C.	F. A. J. Geier	2,099	85	2	2	1	200
Georgetown University Hospital [1-3]	Washington, D. C.	L. H. Kyle	2,798	173	10	40	3	175
George Washington University Hospital [1-3]	Washington, D. C.	T. M. Brown	4,214	91	3	8	3	150
Providence Hospital [3]	Washington, D. C.	T. Collins	2,630	92	2	5	3	350
Veterans Admin. Hospital [1-3-127]	Washington, D. C.	E. D. Freis	2,058	185	5	15	3	270
Washington Hospital Center [1-3]	Washington, D. C.	T. J. Abernethy	2,651	105	3	10	3	215
Veterans Admin. Hospital [1-3]	Coral Gables, Fla.	J. M. Rumball	2,518	309	8	20	3	250
University of Florida Teaching Hospital and Clinics	Gainesville, Fla.		.....	...	..	..	3	...
Duval Medical Center [1-3]	Jacksonville, Fla.	K. B. Hanson	1,630	108	3	6	3	200
Riverside Hospital	Jacksonville, Fla.	D. White	961	7	1	1	1	400
St. Luke's Hospital [1-3]	Jacksonville, Fla.	J. L. Borland	2,192	41	1	1	1	325
St. Vincent's Hospital [1-3]	Jacksonville, Fla.	L. E. Geeslin	3,706	81	3	6	1	325
Jackson Memorial Hospital [1-3]	Miami, Fla.	R. Jones, Jr.	2,978	387	18	48	3	200
Mount Sinai Hospital of Greater Miami [1-3]	Miami Beach, Fla.	D. A. Nathan	4,312	124	4	10	3	250
St. Francis Hospital [1-3]	Miami Beach, Fla.	D. G. Stannus	3,837	64	..	2	2	215
Orange Memorial Hospital [1]	Orlando, Fla.	W. D. Steward	2,847	103	1	4	3	325
Tampa General Hospital [1-3]	Tampa, Fla.	F. Massari	5,152	116	1	3	3	250
Crawford W. Long Memorial Hospital [1-3]	Atlanta, Ga.	L. H. Bishop, Jr.	4,003	70	4	7	3	285
Georgia Baptist Hospital [1-3]	Atlanta, Ga.	M. Johnson	4,167	108	2	5	3	305
Grady Memorial Hospital [1]	Atlanta, Ga.	J. W. Hurst	3,411	305	10	19	3	100
Piedmont Hospital [1]	Atlanta, Ga.	C. Smith	1,825	40	2	4	3	290
St. Joseph's Infirmary [1-3]	Atlanta, Ga.	T. T. Blalock	3,171	73	1	3	3	270
Veterans Admin. Hospital [1]	Atlanta, Ga.	J. C. Crutcher	1,956	128	7	12	3	271
Medical College of Georgia Hospitals			.....	...	..	..	3	...
Eugene Talmadge Memorial Hospital [1-3]	Augusta, Ga.	T. Findley	1,444	73	6	19	..	250
University Hospital [1-3]	Augusta, Ga.	J. D. Gray	2,148	92	1	3	..	200
Veterans Admin. Hospital [1-3]	Augusta, Ga.	J. G. Bohorfoush	1,667	72	2	3	..	270
Emory University Hospital [145]	Emory University, Ga.	R. B. Logue	3,654	76	15	19	3	235

Numerical and other references will be found on pages 788 through 790.

8. INTERNAL MEDICINE—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Length of Approved Program (Years)	Beginning Stipend (Month)
Memorial Hospital of Chatham County [1-3]	Savannah, Ga.	F. T. Nichols, Jr.	1,910	96	1	3	1	350
Queen's Hospital [1-3]	Honolulu, Hawaii	H. C. Gotshalk	4,111	147	2	6	3	150
St. Francis Hospital [1-3]	Honolulu, Hawaii	C. M. Lum	1,959	50	2	5	2	250
Augustana Hospital [1-3]	Chicago	C. A. Hedberg	4,653	98	3	3	1	200
Columbus Hospital [3]	Chicago	E. F. Foley	1,280	103	2	6	2	160
Cook County Hospital	Chicago	E. F. Foley	17,296	1,003	15	45	3	140
Grant Hospital [1-3]	Chicago	A. Vander Kloot	3,730	124	1	2	2	225
Illinois Central Hospital [1-3]	Chicago	W. J. Hand	3,522	99	3	3	2	225
Illinois Masonic Hospital [1-3]	Chicago	L. L. Braun	704	28	6	6	2	115
Mercy Hospital [1-3]	Chicago	G. F. O'Brien	2,032	54	4	9	3	225
Michael Reese Hospital [1-3]	Chicago	R. Levine	5,933	121	5	16	3	125
Mount Sinai Hospital [1-3-5]	Chicago	H. Zimmerman	3,850	115	4	15	3	225
Northwestern University Medical Center [6]								
Chicago Wesley Memorial Hospital [1-3]	Chicago	P. S. Rhoads	4,733	154	4	8	3	125
Passavant Memorial Hospital [1-3]	Chicago	H. L. Alt	2,675	79	..	4	3	125
Veterans Admin. Research Hospital [1-3]	Chicago	C. W. Borden	1,060	70	11	17	3	271
Evanston Hospital [1-3]	Evanston, Ill.	L. F. Jourdonais	3,559	179	2	6	3	225
Norwegian American Hospital [1-3]	Chicago	J. Cavenagh	1,960	60	2	2	3	225
Presbyterian-St. Luke's Hospital [1-3-111]	Chicago	J. A. Campbell	4,733	158	8	24	3	125
Provident Hospital [1-3]	Chicago	A. F. Connor	1,044	41	2	2	1	200
St. Joseph Hospital [1-3]	Chicago	D. L. Kessler	1,869	59	2	2	1	300
St. Mary of Nazareth Hospital [1-3]	Chicago	S. A. Motto	2,789	91	2	2	1	225
University of Chicago Clinics [1-3]	Chicago	W. Adams	4,305	200	8	28	3	200
University of Illinois Research and Educational Hospitals [1-3]	Chicago	H. F. Dowling	1,360	127	4	13	3	145
Veterans Admin. West Side Hospital [1-3]	Chicago	R. J. Korn	1,861	168	7	22	3	270
St. Francis Hospital [1-3]	Evanston, Ill.	J. T. Paul	3,068	180	2	4	3	200
Veterans Admin. Hospital [1-3-100]	Hines, Ill.	E. O. Willoughby	3,247	184	13	41	3	270
St. Francis Hospital [1-3]	Peoria, Ill.	R. B. Rutherford	5,150	157	1	3	3	225
Clinic Hospital [1-3]	Bluffton, Ind.	J. L. Eisaman	3,383	46	1	3	3	300
Marion County General Hospital [1-3]	Indianapolis	P. J Fouts	2,058	126	4	12	3	210
Indiana University Medical Center			.....	...	..	..	3	...
Indiana University Hospital [1]	Indianapolis	J. Hickam	1,916	129	12	24	3	225
Veterans Admin. Hospital [1-3]	Indianapolis	R. H. Behnke	2,263	217	..	..	..	271
Methodist Hospital [1]	Indianapolis	H. D. Van Vactor	4,877	133	2	6	3	275
St. Vincent's Hospital [1-3]	Indianapolis	J. O. Ritchey	2,452	62	1	3	3	275
St. Elizabeth Hospital [1]	Lafayette, Ind	B. Z. Klatch	3,686	102	1	1	1	275
Iowa Methodist Hospital [1-3]	Des Moines, Iowa	A. L. Jenks	2,968	81	1	3	3	200
Veterans Admin. Hospital [1-3]	Des Moines, Iowa	G. D. Winkelman	2,141	118	4	12	3	271
State University of Iowa Hospitals [1-3]	Iowa City	W. B. Bean	3,508	157	8	24	3	175
Veterans Admin. Hospital [1-3-30]	Iowa City	R. D. Eckhardt	1,886	147	6	14	3	270
University of Kansas Medical Center [1-3]	Kansas City, Kan.	E. G. Dimond	2,243	91	8	24	3	125
Veterans Admin. Hospital [1-3]	Kansas City, Mo.	C. E. Andrews	2,327	152	..	..	1	271
St. Francis Hospital [1-3]	Wichita, Kan.	J. W. Butin	6,748	113	2	4	1	...
Wesley Hospital [1-3]	Wichita, Kan.	G. Wood	7,071	73	1	1	1	295
Harlan Memorial Hospital [1-3]	Harlan, Ky.	J. H. Willard	1,802	22	4	12	3	400
Good Samaritan Hospital [1-3]	Lexington, Ky.	J. W. Scott	2,414	49	1	1	1	225
St. Joseph Hospital [1-3]	Lexington, Ky.	C. H. Fortune	2,166	64	1	1	1	230
Louisville General Hospital [1-3]	Louisville, Ky.	B. T. Towery	2,083	202	8	19	3	125
St. Joseph Infirmary [1]	Louisville, Ky.	F. A. Olash	4,170	90	1	3	3	210
Veterans Admin. Hospital [1-3]	Louisville, Ky.	J. R. Gott, Jr.	1,441	110	2	6	3	270
Charity Hospital of Louisiana								
Independent Unit [1]	New Orleans	J. O. Weilbaecher	1,509	126	3	9	3	100
Louisiana State University Unit [1]	New Orleans	W. R. Akenhead	3,340	300	6	18	3	100
Tulane University Unit [1]	New Orleans	G. E. Burch	3,576	312	6	18	3	100
Ochsner Foundation Hospital [1-3]	New Orleans	W. Arrowsmith	2,990	85	3	9	3	225
Southern Baptist Hospital [1-3]	New Orleans	J. Wells	4,693	83	1	3	1	225
Touro Infirmary [1]	New Orleans	A. Prieto	3,610	129	2	6	3	125
Veterans Admin. Hospital [1-3]	New Orleans	H. A. Buechner	2,553	234	8	21	3	271
Confederate Memorial Medical Center [1-3]	Shreveport, La.	M. D. Hargrove	5,267	122	3	9	3	125
Central Maine General Hospital [1]	Lewiston, Maine	M. A. Chapin	1,701	90	1	1	1	225
Maine Medical Center [1-3]	Portland, Maine	R. S. Hawkes	3,475	97	2	6	3	125
Baltimore City Hospitals [1-3]	Baltimore	G. S. Mirick	1,591	138	4	9	3	125
Church Home and Hospital [1-3]	Baltimore	Z. R. Morgan	259	8	3	7	3	200
Franklin Square Hospital [1-3]	Baltimore	L. M. Serra	1,617	92	4	5	3	225
Hospital for Women [1-3]	Baltimore	F. W. Barnes, Jr.	758	26	2	4	3	200
Johns Hopkins Hospital [1-3]	Baltimore	A. M. Harvey	5,374	375	14	23	3	25
Lutheran Hospital [1-3]	Baltimore	L. A. M. Krause	1,681	68	4	8	3	220
Maryland General Hospital [1-3]	Baltimore	E. F. Cotter	2,257	117	4	8	3	225
Mercy Hospital [1-3]	Baltimore	H. R. Peters	1,974	109	2	5	3	275
St. Agnes Hospital [1-3]	Baltimore	L. Gundry	1,880	77	3	8	3	260-285
St. Joseph's Hospital [3]	Baltimore	L. M. Serra	1,879	87	2	5	3	225
Sinai Hospital [1-3]	Baltimore	A. I. Mendeloff	1,983	80	6	11	3	110
South Baltimore General Hospital [3]	Baltimore	L. Lebo	1,137	53	2	8	1	200
Union Memorial Hospital [1-3]	Baltimore	J. E. Howard	2,479	136	5	7	3	215
University Hospital [1-3]	Baltimore	T. E. Woodward	.....	..	..	..	3	...
Prince George's General Hospital [1-3]	Cheverly, Md.	W. B. Moyers	3,901	133	2	6	3	200
Veterans Admin. Hospital [1-3-180]	Fort Howard, Md.	I. Freeman	1,802	134	3	9	3	271
Veterans Admin. Hospital [1-3-180]	Perry Point, Md.	S. Goldgraben	1,015	18	1	2	3	270
Beverly Hospital [1-3-133]	Beverly, Mass.	A. E. Parkhurst	.....	...	..	..	1	...
Beth Israel Hospital [1-3]	Boston	H. L. Blumgart	3,388	145	..	14	3	167
Boston City Hospital	Boston		.....	..	31	51	3	...
I and III Medical Service		F. Biruria	3,438	289	..	..	..	132
II and IV Medical Service		W. B. Castle	3,558	299	..	..	..	132
V and VI Medical Service		K. H. Katz	3,182	166	..	..	..	132
Carney Hospital [3-210]	Boston	F. L. Colpoys	3,059	81	4	9	3	175
Faulkner Hospital [1-3]	Boston	J. R. Graham	1,238	44	2	4	1	150
Lahey Clinic [1-3]	Boston	L. M. Hurxthal, F. N. Allen	5,403	59	10	30	3	200
Lemuel Shattuck Hospital [1-3-204]	Boston	T. C. Chalmers	895	96	8	14	3	262
Long Island Hospital [3]	Boston	J. W. Cass, Jr.	756	55	8	8	1	430
Massachusetts General Hospital [1-3]	Boston	W. Bauer	6,010	..	..	..	3	67
Massachusetts Memorial Hospitals [1-3]	Boston	C. Keefer	1,658	55	5	21	3	175

Numerical and other references will be found on pages 788 through 790.

8. INTERNAL MEDICINE—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
New England Center Hospital [1-3]	Boston	S. Proger	6,269	65	8	58	3	100
New England Deaconess Hospital [1-3]	Boston	C. C. Bailey, H. F. Root	5,625	149	14	17	2	200
Peter Bent Brigham Hospital [1-3-196]	Boston	G. W. Thorn	3,870	227	6	20	3	83
Veterans Admin. Hospital [1-3]	West Roxbury, Mass.	....	....	...	..	..	..	...
St. Elizabeth's Hospital [1-3-209]	Boston	J. P. Rattigan	2,953	97	2	6	3	125
Veterans Admin. Hospital [1-3]	Boston (Jamaica Plain)	M. B. Strauss	5,977	300	14	32	3	271
Cambridge City Hospital [1-3]	Cambridge, Mass.	E. E. Hinton	1,246	75	2	4	2	160
Mount Auburn Hospital [1-3]	Cambridge, Mass.	D. Hurwitz	1,492	150	1	3	2	165
Lawrence F. Quigley Memorial Hospital [1-3-199]	Chelsea, Mass.	W. R. Ohler	1,015	57	..	5	3	262
Malden Hospital [1-3]	Malden, Mass.	E. G. Thorp	2,695	56	2	4	1	200
Newton-Wellesley Hospital [1-3]	Newton Lower Falls, Mass.	A. W. Locke	1,915	88	1	3	3	200
Quincy City Hospital [1-3]	Quincy, Mass.	J. C. Brudno	1,101	55	1	2	1	179
Salem Hospital [1-3]	Salem, Mass.	S. N. Gardner	1,629	49	1	1	1	200
Springfield Hospital [1]	Springfield, Mass.	J. I. Weisman	2,873	112	2	5	3	125
Pondville Hospital	Walpole, Mass.	D. Merrill	.....	...	..	1	1	527
Memorial Hospital [1-3]	Worcester, Mass.	R. W. Robinson	2,662	112	1	4	3	200
St. Vincent Hospital [1-3]	Worcester, Mass.	J. T. Brosnan	3,871	145	5	8	3	175
Worcester City Hospital [1-2]	Worcester, Mass.	J. Landy	2,509	144	2	5	3	250
St. Joseph Mercy Hospital [1-3]	Ann Arbor, Mich.	M. Marshall	4,133	121	4	7	3	310
University Hospital [1-3-215]	Ann Arbor, Mich.	W. D. Robinson	1,391	169	20	62	3	160
Veterans Admin. Hospital [1-3-221]	Dearborn, Mich.	M. R. Weed	4,181	241	6	16	3	270
Alexander Blain Hospital [1-3]	Detroit	P. D. Gelbach	592	14	1	3	2	325
Detroit Memorial Hospital [1-3]	Detroit	J. L. Cahalan	3,406	99	2	4	3	425
Evangelical Deaconess Hospital [1-3]	Detroit	L. D. Stern	1,782	...	2	2	1	307
Grace Hospital [1-3]	Detroit	D. W. Myers	5,830	162	3	9	3	275
Harper Hospital [1-3]	Detroit	R. J. Schneck	3,557	133	4	12	3	275
Henry Ford Hospital [1-3]	Detroit	J. G. Mateer	10,720	422	30	78	3	265
Jennings Memorial Hospital [1-3]	Detroit	D. Donald	320	3	2	2	1	350
Mount Carmel Mercy Hospital [1-3]	Detroit	E. J. Tallant	5,350	174	4	12	3	275
Providence Hospital [1-3]	Detroit	L. J. Bailey	3,599	132	1	3	3	275
Receiving Hospital [1-3]	Detroit	M. Clapper	5,372	397	10	22	3	303
St. John Hospital [1-3]	Detroit	J. Murphy	5,566	77	2	4	3	325
St. Joseph Mercy Hospital [1-3]	Detroit	E. Maire	2,182	59	1	2	3	410
Sinai Hospital [1-3]	Detroit	J. E. Berk	2,097	80	4	12	3	300
Woman's Hospital [1-3]	Detroit	B. I. Johnstone	2,705	156	3	3	1	475
Wayne County General Hospital and Infirmary [1-3]	Eloise, Mich.	W. N. Davis	3,824	287	5	18	3	385
Hurley Hospital [1-3]	Flint, Mich.	G. E. Drewyer	7,174	170	2	6	3	325
McLaren General Hospital [1]	Flint, Mich.	H. V. Sparks	3,449	73	1	3	3	350
Blodgett Memorial Hospital [1-3]	Grand Rapids, Mich.	A. K. Hamp	2,416	138	1	3	3	300
Butterworth Hospital [1-3]	Grand Rapids, Mich.	W. Cayce	2,665	186	2	6	3	300
St. Mary's Hospital [1-3]	Grand Rapids, Mich.	R. H. Murray	2,379	109	1	1	1	300
Bon Secours Hospital [3-220]	Grosse Pointe, Mich.	R. J. Griffin	2,120	47	1	2	2	415
Highland Park General Hospital [1-3]	Highland Park, Mich.	L. Jaffe	3,630	99	1	3	3	308
Bronson Methodist Hospital [1]	Kalamazoo, Mich.	W. D. Harrelson	1,714	82	1	3	3	300
Edward W. Sparrow Hospital [1-3]	Lansing, Mich.	F. C. Swartz	2,303	103	1	3	1	250
St. Lawrence Hospital [1-3]	Lansing, Mich.	J. F. Cordes	3,095	133	1	3	3	250
Pontiac General Hospital [1-3]	Pontiac, Mich.	R. T. Lyons	4,089	76	1	3	2	350
St. Joseph Mercy Hospital [1-3]	Pontiac, Mich.	S. Miller	3,059	44	1	3	3	375
William Beaumont Hospital [1-3]	Royal Oak, Mich.	E. C. Rupp	4,392	90	2	5	3	300
Saginaw General Hospital [1-3]	Saginaw, Mich.	B. M. Bullington	1,834	80	1	3	3	365
Asbury Methodist Hospital [1-3]	Minneapolis	D. R. Hastings	2,695	77	1	1	1	200
Minneapolis General Hospital [1-3]	Minneapolis	T. Lowry	2,121	206	4	10	3	220
Northwestern Hospital [1-3]	Minneapolis	M. C. L. Hanson	3,213	99	3	6	1	200
St. Barnabas Hospital [1-3]	Minneapolis	P. J. Bilke, F. E. Martin	3,541	116	2	2	1	235
University of Minnesota Affiliated Hospitals		....	....	...	..	..	3	...
University Hospital [1-3]	Minneapolis	C. J. Watson	2,102	191	8	22	..	240
Veterans Admin. Hospital [1-3]	Minneapolis	E. B. Flink	5,218	288	13	36	..	271
Ancker Hospital [1-3]	St. Paul	D. Gillespie	1,416	134	2	6	..	220
Mayo Foundation [1]	Rochester, Minn.	R. D. Pruitt	24,040	286	60	187	3	175
Charles T. Miller Hospital [1-3]	St. Paul	M. M. Hurwitz	3,824	82	1	3	3	325
University Hospital [1-3]	Jackson, Miss.	J. R. Snavely	2,768	134	6	18	3	250
St. Louis County Hospital [3]	Clayton, Mo.	R. O. Muether	1,507	137	2	6	3	225
University of Missouri Medical Center [1-3]	Columbia, Mo.	C. T. Ray	962	45	5	12	3	200
Kansas City General Hospital [1-3]	Kansas City, Mo.	V. B. Ballard	3,297	261	4	12	3	220
Menorah Medical Center [1-3]	Kansas City, Mo.	H. Statland	4,273	68	3	7	3	300
St. Joseph Hospital [1-3]	Kansas City, Mo.	A. I. Decker	3,048	93	2	2	1	250
St. Luke's Hospital [1-3]	Kansas City, Mo.	J. A. Jarvis	3,851	164	3	5	3	310
Barnes Hospital [1-3]	St. Louis	C. V. Moore	5,793	243	17	26	3	50
De Paul Hospital [1-3]	St. Louis	R. Potashnick	4,195	91	3	6	3	200
Homer G. Phillips Hospital [1-3]	St. Louis	E. B. Williams	3,656	275	9	19	3	235
Jewish Hospital [1-3]	St. Louis	A. B. Eisenstein	3,725	115	6	12	3	150
Missouri Baptist Hospital [1-3]	St. Louis	W. M. Lonergan	3,479	86	2	5	3	175
Missouri Pacific Hospital [3]	St. Louis	L. B. Harrison	4,865	113	6	9	3	200
St. John's Hospital [1-3]	St. Louis	J. J. Hammond	2,862	120	4	8	3	200
St. Louis City Hospital [1-3-236]	St. Louis	B. Bercu, R. Kinsella, Jr.	3,699	322	12	28	3	231
St. Luke's Hospital [1-3]	St. Louis	P. O. Hagemann	3,198	118	3	5	3	250
St. Mary's Group of Hospitals [1-3]	St. Louis	R. Wegria	5,146	266	6	15	3	100
Veterans Admin. Hospital [1-3]	St. Louis	R. J. Bing	783	58	3	6	3	271
St. Louis University Service [1-3]		....	....	...	..	..	..	...
Washington University Service [1-3]		....	....	...	..	..	..	...
Veterans Admin. Hospital [1-3]	Lincoln, Neb.	J. R. Gordon	1,128	45	1	3	3	270
Creighton Memorial-St. Joseph's Hospital [1-3]	Omaha	J. R. Walsh	7,631	97	4	12	3	210
University of Nebraska Hospital [1-3-240]	Omaha	R. L. Grissom	585	54	2	6	3	200
Veterans Admin. Hospital [1-3-240]	Omaha	J. M. Holthaus	1,688	97	4	12	3	270
Dartmouth Medical School Affiliated Hospitals			.....	...	..	..	3	...
Mary Hitchcock Memorial Hospital [1-3]	Hanover, N. H.	J. W. Wright	4,795	172	6	18	..	218
Veterans Admin. Hospital [1-3]	White River Jct., Vt.	J. L. Grant	4,795	172	6	18	..	218
Atlantic City Hospital [1-3]	Atlantic City	W. B. Stewart	2,452	131	2	4	3	200
Cooper Hospital [1-3]	Camden, N. J.	E. N. Murray	2,799	152	2	4	3	200
Veterans Admin. Hospital [1-3-304]	East Orange, N. J.	H. A. Weiner	1,552	149	7	13	3	270
Hackensack Hospital [1-3]	Hackensack, N. J.	L. W. Black	2,298	99	2	5	3	150
Jersey City Medical Center [1-3]	Jersey City, N. J.	T. J. White	7,106	319	10	27	3	108
Mountainside Hospital [1-3]	Montclair, N. J.	M. Block	2,312	112	1	5	3	250

Numerical and other references will be found on pages 788 through 790.

8. INTERNAL MEDICINE—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
Burlington County Hospital [1-3]	Mount Holly, N. J.	L. E. Viteri	1,540	90	..	4	1	100
Fitkin Memorial Hospital [1-3]	Neptune, N. J.	L. F. Albright	2,300	81	2	2	2	250
Newark Beth Israel Hospital [1-3]	Newark, N. J.	A. Bernstein	2,484	105	2	4	3	100
St. Michael's Hospital [1-3-254]	Newark, N. J.	N. A. Antonius	2,751	96	4	9	3	165
St. Peter's General Hospital [1-3]	New Brunswick, N. J.	J. Sandella	1,318	58	1	3	1	175
Bergen Pines County Hospital [1-3]	Paramus, N. J.	S. F. Alexander	1,312	173	6	11	3	300
St. Francis Hospital [1-3]	Trenton, N. J.	J. T. Dimun	3,104	129	2	4	2	210
Bataan Me	Mex.	O. S. Cramer	1,649	82	3	9	3	250
Bernalillo	Mex.	C. R. Beeson	847	73	1	3	3	350
Veterans A	Mex.	W. S. Taylor	1,864	77	5	10	3	271
Albany Hc	N. Y.	R. T. Beebe	3,408	251	6	23	3	100
Veterans A	N. Y.	J. H. Cullen	2,648	220	7	17	3	271
Binghamton City Hospital [1-3]	Binghamton, N. Y.	F. X. Haines	3,720	107	2	4	3	225
Beth El Hospital [1-3]	Brooklyn, N. Y.	I. Snapper	2,272	59	5	8	3	170
Brooklyn Hospital [1-3-45]	Brooklyn, N. Y.	G. E. Anderson	2,988	74	..	..	3	175
Coney Island Hospital [1-3]	Brooklyn, N. Y.		.....	...	..	..	3	165
Jewish Chronic Disease Hospital [1-3]	Brooklyn, N. Y.	M. G. Goldner	1,716	76	10	21	1	200
Jewish Hospital [1-3]	Brooklyn, N. Y.	J. Goldstein	2,343	92	7	15	3	100
Kings County Hospital [1-3]	Brooklyn, N. Y.	P. H. Long	15,518	537	11	36	3	145
Long Island College Hospital [1-3]	Brooklyn, N. Y.	J. N. Edson	3,120	110	2	6	3	156
Lutheran Medical Center [1-3-261]	Brooklyn, N. Y.	W. F. Rexer	910	47	1	3	3	135
Maimonides Hospital [1-3]	Brooklyn, N. Y.	D. Grob	3,806	131	8	14	3	75
Methodist Hospital [1-3]	Brooklyn, N. Y.	H. D. Fearon	2,070	72	2	5	3	175
St. Catherine's Hospital [1-3]	Brooklyn, N. Y.	M. V. Bonventre	1,322	61	1	3	3	125
St. John's Episcopal Hospital [1-3]	Brooklyn, N. Y.	E. R. Marzullo	1,666	31	3	5	3	175
St. Mary's Hospital [1-3]	Brooklyn, N. Y.	V. Annunziata	786	13	1	2	1	200
Veterans Admin. Hospital [1-3]	Brooklyn, N. Y.	P. W. Spear	3,555	247	12	37	3	270
Allied Hospitals of the Sisters of Charity [1-3]	Buffalo		...	...	..	..	3	...
Buffalo General Hospital [1-3]	Buffalo	J. H. Talbott	3,380	254	4	10	3	175
Deaconess Hospital [1-3]	Buffalo	W. T. Zimdahl	2,311	85	1	3	1	300
Edward J. Meyer Memorial Hospital [1-3]	Buffalo	D. K. Miller	4,287	213	7	21	3	245
Millard Fillmore Hospital [1-3]	Buffalo	J. F. Painton	2,375	96	3	9	3	285
Roswell Park Memorial Institute [1-3]	Buffalo	J. F. Holland	555	112	..	6	1	318
Veterans Admin. Hospital [1-3-269]	Buffalo	G. W. Bissell	2,234	161	6	12	3	271
Clifton Springs Sanitarium and Clinic [1-3]	Clifton Springs, N. Y.	B. A. Watson	2,280	27	1	3	3	150
Mary Imogene Bassett Hospital [1-3]	Cooperstown, N. Y.	E. D. Thomas	1,012	64	2	4	3	200
City Hospital at Elmhurst [1-3]	Elmhurst, N. Y.	L. R. Tuchman	3,892	278	6	16	3	145
Flushing Hospital and Dispensary [1-3-284]	Flushing, N Y.	C. Cramer	1,805	65	1	3	2	175
Meadowbrook Hospital [1-3]	Hempstead, N. Y.	A. W. Freireich	2,371	219	5	15	3	225
Cornell University Infirmary and Clinic [1-3]	Ithaca, N. Y.	N. S. Moore	3,192	2	4	4	1	208
Tompkins County Memorial Hospital	Ithaca, N. Y.		...	...	..	..	..	...
Jamaica Hospital [1-3]	Jamaica, N. Y.	D. Porte	1,554	70	1	2	1	200
Queens Hospital Center [1-3]	Jamaica, N. Y.	A. A. Fischl	5,031	367	8	14	3	145
Charles S. Wilson Memorial Hospital [1-3]	Johnson City, N. Y.	N. R. Occhino	4,813	85	3	5	2	225
North Shore Hospital [1-3]	Manhasset, N. Y.	W. J. Messinger	1,239	62	2	4	2	200
Mount Vernon Hospital [1-3]	Mount Vernon, N. Y.	H. Belsky	1,915	91	1	2	2	200
Long Island Jewish Hospital [1-3]	New Hyde Park, N. Y.	E. Meilman	2,081	106	2	4	3	75
New Rochelle Hospital [1-3]	New Rochelle, N. Y.	W. C. Meredith	3,782	114	1	3	3	225
Beekman Downtown Hospital [1-3]	New York City	M. McCall	2,446	80	7	7	1	200
Bellevue Hospital Center								
Div. I—Columbia University [1-3-38]	New York City	D. W. Richards	1,543	...	7	13	3	145
Div. II—Cornell University [1-3-21]	New York City	T. Almy	1,492	...	9	14	3	145
Div. III—New York University College of Medicine [1-3]	New York City	L. Thomas	2,027	...	7	16	3	145
Div. IV—New York University Post-Graduate Medical School [1-3-292]	New York City	C. F. Wilkinson, Jr.	1,698	...	..	20	3	145
Beth Israel Hospital [1-3]	New York City	A. M. Fishberg	1,986	70	4	8	3	100
Bronx Hospital [1-3]	New York City	E. E. Fischel	2,576	67	4	9	3	100
Bronx Municipal Hospital Center [1-3]	New York City	I. M. London	2,450	253	12	24	3	145
Columbus Hospital [3]	New York City	A. Siragusa	2,010	90	1	3	3	160
Fordham Hospital [1-3]	New York City		.....	..	..	..	2	145
Francis Delafield Hospital [1-3-54]	New York City	R. F. Loeb	512	73	4	8	3	145
French Hospital [1-3]	New York City	H. J. McNeile	1,298	20	1	3	3	110
Goldwater Memorial Hospital								
Columbia University and Research Division [1-3]	New York City	*Y. Kneeland, Jr., D. Seegal*	234	18	5	5	1	145
Third New York University Medical Research Service [1-3]	New York City	J. M. Steele, M. Rosenbluth	650	46	5	12	2	145
Grand Central Hospital [1-3]	New York City	H. A. Solomon	1,127	32	3	6	1	135
Harlem Hospital [1-3]	New York City	S. S. Paley	3,625	120	8	22	3	145
Hospital for Joint Diseases [1-3]	New York City	M. L. Kramer	1,106	37	1	2	2	80
Knickerbocker Hospital [1-3]	New York City	M. S. Bruno	1,561	85	3	6	3	150
Lebanon Hospital [1-3]	New York City		.....	..	..	..	1	...
Lenox Hill Hospital [1-3]	New York City	E. A. Lawrence, C. de la Chapelle	2,050	51	3	9	3	180
Lincoln Hospital [1-3]	New York City	C. R. Messeloff	3,097	140	6	14	3	145
Memorial Center for Cancer and Allied Diseases [1-3-21]	New York City	R. Lawson, L. Craver	1,825	251	7	20	3	150
James Ewing Hospital			.....	...	..	..	..	145
Memorial Hospital			.....	...	..	..	..	...
Misericordia Hospital [1-3]	New York City	L. V. Rooney	912	14	2	4	1	125
Montefiore Hospital [1-3]	New York City	L. Leiter	4,813	290	24	41	3	157
Morrisania City Hospital [1-3]	New York City	S. Biloon	3,712	185	8	12	2	145
Mount Sinai Hospital [1-3]	New York City	A. B. Gutman	6,405	228	10	28	3	75
New York Hospital [1-3]	New York City	E. H. Luckey	5,510	230	8	27	3	164
New York Infirmary [1-3]	New York City	A. P. McCombs	809	21	1	2	1	150
New York Medical College—Metropolitan Medical Center		K. R. Crispell	.....	...	..	..	..	...
Bird S. Coler Memorial Hospital and Home [3]	New York City		2,656	112	15	40	1	145
Flower and Fifth Avenue Hospitals [1-3]	New York City		1,469	13	2	4	3	125
Metropolitan Hospital [1-3]	New York City		6,142	210	6	18	3	145
New York University—Bellevue Medical Center University Hospital [1-3]	New York City	C. A. Wilkenson, Jr.	2,441	79	4	4	1	165
Presbyterian Hospital [1]	New York City	R. F. Loeb	5,854	143	12	21	3	250

Numerical and other references will be found on pages 788 through 790.

8. INTERNAL MEDICINE—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [5]	Total Residencies Offered [4]	Length of Approved Program (Years)	Beginning Stipend (Month)
Roosevelt Hospital [3]	New York City	A. J. Antenucci, J. M. Freston	3,117	107	8	11	3	123
St. Barnabas Hospital for Chronic Diseases [1-3]	New York City	A. J. Patek, Jr.	1,108	72	2	4	2	75
St. Clare's Hospital [1-3]	New York City	J. P. Croce	2,200	62	1	3	2	200
St. Luke's Hospital [1-3]	New York City	T. B. Van Itallie	3,120	110	6	6	3	100
St. Vincent's Hospital [1-3]	New York City	W. J. Grace	1,231	231	6	18	3	125
Sydenham Hospital [1-3]	New York City	E. Appelbaum	1,181	17	2	3	1	115
Veterans Admin. Hospital (Bronx) [1-3-288]	New York City	J. Wolf	1,953	259	15	40	3	271
Veterans Admin. Hospital (Manhattan) [1-3-281]	New York City	J. J. Smith	2,420	171	5	23	3	271
United Hospital [1-3]	Port Chester, N. Y.		...	...	..	..	1	...
Genesee Hospital [3]	Rochester, N. Y.	H. L. Segal	1,925	157	2	5	3	150
Highland Hospital [1-3]	Rochester, N. Y.	J. W. Holler	1,569	102	2	5	3	175
Rochester General Hospital [1-3]	Rochester, N. Y.	L. Horn	2,703	102	3	9	3	150
St. Mary's Hospital [1-3]	Rochester, N. Y.	J. W. Quinlan	2,597	156	1	3	3	225
Strong Memorial-Rochester Municipal Hospital [1-3]	Rochester, N. Y.	L. E. Young	4,700	268	14	16	3	117
Ellis Hospital [1-3]	Schenectady, N. Y.	M. E. Moravec	3,070	147	3	7	3	150
Staten Island Hospital [1-3]	Staten Island, N. Y.		...	...	..	..	1	...
State University of New York Upstate								
Medical Center [1-3]	Syracuse, N. Y.	R. H. Lyons	5,021	338	12	36	3	223
Veterans Admin. Hospital [1-3]	Syracuse, N. Y.	B. V. Jager	1,969	118	7	11	..	270
Grasslands Hospital [1-3]	Valhalla, N. Y.	W. P. Reed	1,139	114	2	5	3	175
White Plains Hospital [1-3]	White Plains, N. Y.	D. Fertig	1,318	50	1	3	3	175
North Carolina Memorial Hospital [1-3]	Chapel Hill, N. C.	C. H. Burnett	1,108	41	8	26	3	175
Charlotte Memorial Hospital [1]	Charlotte, N. C.	J. M. Alexander	2,512	90	1	3	3	205
Duke University Affiliated Hospitals			...	...	..	..	3	...
Duke Hospital [1-3]	Durham, N. C.	E. A. Stead, Jr.	3,012	110	20	45	..	102
Veterans Admin. Hospital [1-3]	Durham, N. C.	E. H. Estes, Jr.	2,588	98	4	12	..	270
Watts Hospital [1-3]	Durham, N. C.	I. H. Manning, Jr.	3,481	48	2	5	3	300
City Memorial Hospital [1-3]	Winston-Salem, N. C.	C. H. Reid	3,996	66	1	3	3	315
North Carolina Baptist Hospital [1-3]	Winston-Salem, N. C.	E. Yount	4,782	108	5	11	3	166
Bismarck Hospital [3]	Bismarck, N. Dak.	C. H. Peters	1,987	37	2	2	1	300
St. Luke's Hospital [3]	Fargo, N. Dak	L. E. Wold	1,997	53	2	2	1	200
Akron City Hospital [1-3]	Akron, Ohio	T. L. Bliss	1,465	...	2	6	3	250
Akron General Hospital [1-3]	Akron, Ohio	H. Kraus	2,881	111	4	9	3	250
St. Thomas Hospital [1-3]	Akron, Ohio	M. G. Wince	2,527	101	2	5	2	250
Aultman Hospital [1-3]	Canton, Ohio	H. J. Ickes	5,096	128	3	6	3	275
Mercy Hospital [1-3]	Canton, Ohio	M. F. Moots	5,673	203	2	6	3	...
Christ Hospital [1-3]	Cincinnati	C. E. Richards	1,511	169	2	4	1	200
Daniel Drake Memorial Hospital	Cincinnati		.....	...	..	..	1	...
Good Samaritan Hospital [1-3]	Cincinnati	L. B. Owens	3,169	115	2	6	3	250
Jewish Hospital [1-3]	Cincinnati	H. S. Schiro	3,012	188	7	12	3	195
St. Mary's Hospital [1-3]	Cincinnati	E. A. Schlueter	1,391	69	3	7	3	275
University of Cincinnati College of Medicine Hospital Group			....	...	..	..	3	...
Cincinnati General Hospital [1-3]	Cincinnati	R. W. Vilter	2,157	271	12	31	..	170
Veterans Admin. Hospital [1-3]	Cincinnati	N. Fowler	1,061	102	..	..	..	271
Cleveland Clinic Hospital [1-3]	Cleveland	A. C. Ernstene	3,784	176	10	31	3	275
Cleveland Metropolitan General Hospital [1-3]	Cleveland	C. H. Rammelkamp, Jr.	1,669	187	4	20	3	150
Fairview Park Hospital [1-3]	Cleveland	H. E. Christman	3,165	87	3	7	3	...
Highland View-Cuyahoga County Hospital [1-3]	Cleveland	D. R. Weir	1,360	147	5	9	1	192
Huron Road Hospital [1-3]	Cleveland	E. A. Marshall	3,031	138	2	6	3	210
Lutheran Hospital [1-3]	Cleveland	M. August	1,670	84	1	3	3	250
Mount Sinai Hospital [1-3]	Cleveland	M. L. Siegel	2,957	156	6	11	3	215
St. John's Hospital [1-3]	Cleveland	W. M. Novince	2,271	63	2	3	1	225
St. Luke's Hospital [1-3]	Cleveland	A. D. Nichol	4,095	172	3	8	3	200
St. Vincent Charity Hospital [1-3]	Cleveland	F. R. Hanrahan, Jr.	3,967	111	4	8	3	210
University Hospitals [1-3]	Cleveland	R. H. Ebert	4,695	369	12	20	3	125
Veterans Admin. Hospital [1-3-23-320]	Cleveland	N. P. Shumway	2,062	172	4	24	3	271
Doctors Hospital	Cleveland Heights, Ohio		...	...	..	..	3	...
Mount Carmel Hospital [1-3]	Columbus, Ohio	P. T. Knies	1,845	72	2	6	3	275
Ohio State University Hospitals								
University Hospital [1-3]	Columbus, Ohio	B. K. Wiseman	3,628	228	6	15	3	177
White Cross Hospital [1-3]	Columbus, Ohio	D. J. Vincent	1,853	85	1	3	3	290
Good Samaritan Hospital [1]	Dayton, Ohio	J. P. Kuperman	3,726	68	2	2	1	285
Miami Valley Hospital [1-3]	Dayton, Ohio	F. Urban	5,810	212	2	6	3	225
Veterans Admin. Hospital [1-3]	Dayton, Ohio	S. Simerman	1,860	153	10	24	3	271
Marymount Hospital [1-3]	Garfield Heights, Ohio	F. J. Hruby	2,083	55	2	6	3	200
Mercy Hospital [1-3]	Hamilton, Ohio	R. Martz	2,891	109	2	6	1	200
Lakewood Hospital [1-3]	Lakewood, Ohio	J. T. Ledman	2,218	85	3	6	1	200
Lima Memorial Hospital [1-3]	Lima, Ohio	L. N. Irvin	1,459	27	1	1	1	275
St. Rita's Hospital [1-3]	Lima, Ohio	H. G. Deerhake	1,529	35	1	3	1	325
Maumee Valley Hospital [1-3]	Toledo, Ohio	M. E. Green	1,558	98	1	3	3	285
St. Vincent's Hospital [1-3]	Toledo, Ohio	M. A. Schnitker	5,104	134	1	3	3	325
Toledo Hospital [1-3]	Toledo, Ohio	J. L. Kobacker	3,669	178	1	3	3	275
Trumbull Memorial Hospital [1-3]	Warren, Ohio	J. R. McKay	3,410	66	1	3	3	300
St. Elizabeth Hospital [1-3]	Youngstown, Ohio	B. I. Firestone	5,150	97	3	6	2	300
Youngstown Hospital [1-3]	Youngstown, Ohio	J. Noll	6,580	327	3	9	3	325
St. Anthony Hospital	Oklahoma City	P. M. McNeill	2,495	62	1	2	2	300
University of Oklahoma Medical Center		S. Wolf	.....	...	10	28	3	...
University Hospitals	Oklahoma City		1,511	97	..	..	..	200
Veterans Admin. Hospital [1]	Oklahoma City	J. F. Hammarsten	2,461	137	..	..	..	271
Wesley Hospital [1]	Oklahoma City	W. W. Rucks, Jr.	1,612	61	1	1	1	300
St. John's Hospital [1]	Tulsa, Okla.	N. C. Gaddis	4,285	82	1	3	3	175
Emanuel Hospital [1-3]	Portland, Ore.	R. J. Alleman	3,772	127	1	3	3	275
Good Samaritan Hospital [1-3]	Portland, Ore.	W. Larsen	3,910	109	2	6	3	275
Providence Hospital [1-3]	Portland, Ore	R. McMahon	4,066	147	1	3	3	275
St. Vincent's Hospital [1-3]	Portland, Ore.	D. E. Olson	5,127	291	2	6	3	275
University of Oregon Medical School Hospitals and Clinics [1-3]	Portland, Ore.	H. P. Lewis	3,317	270	3	9	3	125
Veterans Admin. Hospital [1-3]	Portland, Ore.	L. W. Ritzmann	2,341	145	7	19	3	270
Abington Memorial Hospital [1-3]	Abington, Pa.	J. T. Beardwood, Jr.	1,913	125	2	4	3	150
Allentown Hospital [1-3]	Allentown, Pa.	H. E. Everett	2,387	121	1	3	3	225
Sacred Heart Hospital [1-3]	Allentown, Pa.	A. W. Dubbs	3,122	82	1	3	2	225
St. Luke's Hospital [1-3]	Bethlehem, Pa.	R. K. Shields	3,192	162	2	2	3	225
Bryn Mawr Hospital [3]	Bryn Mawr, Pa.	W. W. Dyer	2,920	171	2	5	3	200

Numerical and other references will be found on pages 788 through 790.

8. INTERNAL MEDICINE—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [9]	Length of Approved Program (Years)	Beginning Stipend (Month)
Geo. F. Geisinger Memorial Hospital [1-3]	Danville, Pa.	J. A. Collins	2,523	96	3	8	3	175
Easton Hospital [1-3]	Easton, Pa.	J. Kincov	1,846	40	1	3	3	250
Hamot Hospital [1-3]	Erie, Pa.	J. B. Tredway	3,305	95	1	3	2	250
St. Vincent's Hospital [1-3]	Erie, Pa.		...	..	..	..	3	...
Harrisburg Hospital [1-3]	Harrisburg, Pa.	J. A. Daugherty	3,756	151	2	4	3	250
Harrisburg Polyclinic Hospital [1]	Harrisburg, Pa.	A. W. Cowley	3,321	170	2	4	3	250
Albert Einstein Medical Center								
Northern Division [1-3]	Philadelphia	B. A. Gouley	2,989	149	5	11	3	125
Southern Division [1-3]	Philadelphia	T. Mendell	2,435	76	2	5	3	125
Chestnut Hill Hospital [1]	Philadelphia	R. M. Truitt, Jr.	1,211	58	2	2	2	350
Episcopal Hospital [1-3]	Philadelphia	S. R. Vogel	2,124	111	2	6	3	150
Frankford Hospital [1-3]	Philadelphia	G. E. Mark, Jr.	1,250	53	..	1	1	250
Germantown Dispensary and Hospital [1-3]	Philadelphia	R. W. Mays	2,297	105	1	3	3	175
Graduate Hospital of the University of Pennsylvania [1-3]	Philadelphia	H. L. Bockus	1,621	78	4	7	3	100
Hahnemann Medical College and Hospital [1-3]	Philadelphia	J. H. Moyer	3,233	176	5	23	3	75
Hospital of the University of Pennsylvania [1-3]	Philadelphia	F. C. Wood	5,292	204	14	45	3	...
Hospital of the Woman's Medical College of Pennsylvania [1-3]	Philadelphia	W. G. Leaman, Jr.	1,371	49	1	3	3	110
Jefferson Medical College Hospital [1-3]	Philadelphia	W. A. Sodeman	4,220	127	2	22	3	100
Lankenau Hospital [1-3]	Philadelphia	E. L. Bortz, D. B. Pierson	2,760	117	2	6	3	200
Mercy-Douglass Hospital	Philadelphia	E. E. Holloway	615	14	2	4	2	200
Methodist Episcopal Hospital [1-3]	Philadelphia	H. F. Robertson	1,752	69	2	2	1	150
Nazareth Hospital [1-3]	Philadelphia	S. J. Skromak	1,373	62	1	1	1	300
Pennsylvania Hospital [1-3]	Philadelphia	G. G. Duncan	3,039	179	7	12	3	20
Philadelphia General Hospital [1-3]	Philadelphia	D. Cooper	5,537	564	7	21	3	121
Presbyterian Hospital [1-3]	Philadelphia	G. P. Rouse	2,092	98	2	6	3	175
Temple University Hospital [1-3]	Philadelphia	T. M. Durant	5,053	170	6	18	3	...
Veterans Admin. Hospital [1-3]	Philadelphia	H. P. Close	4,060	260	6	18	3	270
Allegheny General Hospital [1-3]	Pittsburgh	V. B. Callomon	2,922	86	1	3	3	200
Mercy Hospital [1-3]	Pittsburgh	J. M. Johnston	3,307	155	2	5	3	235
Montefiore Hospital [1-3]	Pittsburgh	J. H. Silverberg	3,066	121	2	6	3	225
Pittsburgh Hospital [1-3]	Pittsburgh	A. V. Morgan	1,403	49	1	1	1	200
Health Center Hospitals of the University of Pittsburgh School of Medicine								
Elizabeth Steel Magee Hospital [1]	Pittsburgh	C. R. Schaefer	1,730	86	2	4	3	125
Presbyterian Hospital [1-3]	Pittsburgh	J. D. Myers	3,497	183	6	15	3	125
Veterans Admin. Hospital [1-3]	Pittsburgh	A. S. Glushien	4,040	294	8	24	3	271
St. Francis General Hospital and Rehabilitation Institute [1-3]	Pittsburgh	F. Concilus	4,728	102	2	6	3	240
St. Margaret Memorial Hospital [1-3]	Pittsburgh	C. J. Bowen	1,339	54	1	1	1	300
Western Pennsylvania Hospital [1-3]	Pittsburgh	R. L. Forsyth	3,747	152	2	6	3	225
Reading Hospital [1-3]	Reading, Pa.	J. R. Spannuth	2,615	191	2	6	3	...
Robert Packer Hospital [1-3]	Sayre, Pa.	S. D. Conklin	4,110	75	3	9	3	225
Bayamon Charity District Hospital [1-3]	Bayamon, P. R.	R Rodriguez	1,092	96	..	..	3	...
Ponce District General Hospital [3]	Ponce, P. R.	H. Rodriguez	1,812	76	3	9	3	250
San Juan City Hospital [1-3]	San Juan, P. R.	R. S. Diaz Rivera	957	83	6	17	3	175
Veterans Admin. Hospital [1-3-406]	San Juan, P. R.	E. A. Ramirez	1,699	38	3	9	3	318
Rhode Island Affiliated Hospitals			...	...	..	..	3	...
Newport Hospital [1-3]	Newport, R. I.	H. W. Brownell	2,048	38	1	1	..	150
Memorial Hospital [1-3]	Pawtucket, R. I.	A. M Burgess	1,452	87	1	1	..	225
Miriam Hospital [1-3]	Providence, R. I.	E. A. Sharp	1,770	48	..	1	..	250
Rhode Island Hospital [1-3]	Providence, R. I.	M. N. Fulton	4,133	226	6	10	3	125
Veterans Admin. Hospital [1-3]	Providence, R. I	R. W. Phillips	1,932	115	2	4	2	270
Teaching Hospitals of the Medical College of South Carolina [1]	Charleston, S. C.	J. A. Boone, V. Moseley	3,599	124	7	14	3	137
Columbia Hospital of Richland County [1]	Columbia, S. C.	W. C. McLain, Jr.	3,395	61	1	1	1	175
Baroness Erlanger Hospital [1-3]	Chattanooga, Tenn.	R. W. Myers	1,002	53	4	7	3	325
St. Mary's Memorial Hospital [3]	Knoxville, Tenn.	E. C. Sienknecht	5,207	92	2	3	2	250
University of Tennessee Memorial Research Center and Hospital [1]	Knoxville, Tenn.	R. B. Wood	2,194	79	1	3	3	320
Baptist Memorial Hospital [1-3]	Memphis		...	...	..	..	1	325
City of Memphis Hospitals [1-3]	Memphis	I. F. Tullis	2,645	321	6	16	3	150
St. Joseph's Hospital [1-3]	Memphis	S. Blackwell	3,573	70	1	3	1	325
Veterans Admin. Hospital [1-3]	Memphis	F. S. Dietrich	2,942	222	4	15	3	271
Baptist Hospital [1-3]	Nashville, Tenn.	C. C. Woodcock	3,331	18	3	3	1	300
George W. Hubbard Hospital [1-3]	Nashville, Tenn.	G. B. Brothers	1,362	78	2	5	3	125
Nashville General Hospital [1-3]	Nashville, Tenn.	W. J. Card	1,657	41	2	2	1	325
St. Thomas Hospital [1-3]	Nashville, Tenn.	J. J. Calloway	2,341	41	2	5	3	300
Vanderbilt University Hospital [1-3]	Nashville, Tenn.	R. H. Kampmeier	3,323	113	..	13	3	50
Veterans Admin. Hospital [1]	Nashville, Tenn.	R. France	2,617	113	4	9	3	270
Oak Ridge Institute of Nuclear Studies—Medical Division [1-3-24]	Oak Ridge, Tenn.	G. A. Andrews	349	20	..	2	1	253
Baylor University Hospital [3]	Dallas, Texas	R. Tompsett	5,925	173	3	9	3	180
Methodist Hospital [1-3]	Dallas, Texas	A. E. Haley	672	14	1	4	3	200
Parkland Memorial Hospital [1-3]	Dallas, Texas	D. Seldin	2,922	195	14	23	3	150
St. Paul's Hospital [1-3]	Dallas, Texas	P. Q. Needham	3,745	121	2	6	3	150
Veterans Admin. Hospital [1-3-374]	Dallas, Texas	B. Friedman	2,112	169	5	9	3	271
Harris Hospital [1]	Fort Worth, Texas	J. M. Church	3,848	71	1	3	2	300
University of Texas Medical Branch Hospitals [1-3-10]	Galveston, Texas	J. V. Warren	3,403	225	8	20	3	160
Baylor University College of Medicine Affiliated Hospitals			...	...	..	..	3	...
Jefferson Davis Hospital [1-3]	Houston, Texas	E. M. Yow	1,835	197	6	16	..	82.50
Methodist Hospital [1-3]	Houston, Texas	H. W. Cummings, Jr.	3,315	91	1	3	..	220
Veterans Admin. Hospital [1-3]	Houston, Texas	H. D. Bennett	3,517	252	7	21	..	270
Hermann Hospital [1-3]	Houston, Texas	E. A. Wilkerson	6,318	163	3	9	3	125
Memorial Hospital [1-3]	Houston, Texas	A. A. Ledbetter	7,596	70	1	1	1	220
St. Joseph's Hospital [3]	Houston, Texas	S. Schnur	3,642	71	1	1	1	220
St. Luke's Episcopal Hospital [1-3]	Houston, Texas		...	...	..	..	1	...
University of Texas M. D. Anderson Hospital and Tumor Institute [1-3]	Houston, Texas	C. D. Howe	1,100	163	..	8	1	300
Veterans Admin. Hospital [1-3]	McKinney, Texas	G. A. Edwards	1,500	65	2	4	3	271
Robert B. Green Memorial Hospital [1-3]	San Antonio, Texas	L. B. Reppert	929	133	2	4	2	150
Santa Rosa Hospital [1-3]	San Antonio, Texas	R. E. Nitschke	3,214	107	1	1	1	200

Numerical and other references will be found on pages 788 through 790.

8. INTERNAL MEDICINE—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered[8]	Total Residencies Offered[8]	Length of Approved Program (Years)	Beginning Stipend (Month)
Scott and White Memorial Hospitals[1-3-378]	Temple, Texas	J. G. Rodarte	6,013	77	3	9	3	300
Thomas D. Dee Memorial Hospital[1]	Ogden, Utah	G. H. Keyes	1,008	155	2	2	1	300
Dr. W. H. Groves Latter-Day Saints Hospital[1-3]	Salt Lake City	J. R. Miller	3,825	114	3	6	3	275
Holy Cross Hospital[1-3]	Salt Lake City	G. Gross	1,708	57	1	1	1	275
University of Utah College of Medicine Affiliated Hospitals		...	...	...	..	..	3	...
Salt Lake County General Hospital[1-3]	Salt Lake City	M. M. Wintrobe	1,216	159	8	16	..	260
Veterans Admin. Hospital[1-3]	Salt Lake City	H. W. Harris	1,275	121	8	16	..	255
University of Vermont Affiliated Hospitals								
De Goesbriand Memorial Hospital[1-3]	Burlington, Vt.	C. M. Terrien	1,724	57	2	3	2	200
Mary Fletcher Hospital[1-3]	Burlington, Vt.	E. L. Amidon	1,802	54	3	6	2	100
Alexandria Hospital[1-3]	Alexandria, Va.	J. C. Watson	1,739	66	3	3	1	275
University of Virginia Hospital[1-3]	Charlottesville, Va.	W. Parson	3,127	82	6	12	3	75
Chesapeake and Ohio Hospital[1-3]	Clifton Forge, Va.	A. Williams	3,610	59	2	4	1	...
Riverside Hospital[1-3]	Newport News, Va.	J. E. McClellan	2,027	69	2	2	1	250
De Paul Hospital[1-3]	Norfolk, Va.	R. B. Gahagan	2,052	80	2	4	3	200
Norfolk General Hospital[1-3]	Norfolk, Va.	J. Franklin	2,806	94	2	4	3	215
Johnston-Willis Hospital[1-3]	Richmond, Va.	J. M. Hutcheson	2,847	75	2	2	1	250
Medical College of Virginia Affiliated Hospitals			...	..	..	..	3	...
Medical College of Virginia—Hospital Division[1-3]	Richmond, Va.		4,217	178	15	21	..	75
Veterans Admin. Hospital[1-3]	Richmond, Va.		4,081	158	9	27	..	271
Jefferson Hospital[1-3]	Roanoke, Va.		1,188	35	1	1	1	200
Lewis Gale Hospital[1-3]	Roanoke, Va.	R. H. Jones, Jr.	3,053	11	2	2	3	350
Roanoke Memorial Hospital[1-3]	Roanoke, Va.	...	...	..	..	..	3	...
Doctors Hospital[1-3]	Seattle	Q. B. De Marsh	2,824	86	1	2	1	250
Providence Hospital[1-3]	Seattle	W. B. Spickard	4,063	139	2	3	2	300
Swedish Hospital[1-3]	Seattle	D. R. Sparkman	4,928	193	2	2	1	225
University o[illegible]								
Affiliated [illegible]		...	....	...	..	..	3	...
King Cour[illegible]		R. H. Williams	2,657	341	20	42	..	150
University Hospital	Seattle	...	....	...	..	..	..	...
Veterans Admin. Hospital[1-3]	Seattle	R. S. Evans	1,354	143	6	13	..	271
Virginia Mason Hospital[1-3]	Seattle	R. L. King	2,809	97	2	6	3	150
Deaconess Hospital[1-3]	Spokane, Wash.	...	.....	..	..	..	1	..
Beckley Memorial Hospital[1-3]	Beckley, W. Va.	A. D. Kistin	1,815	71	2	6	3	100
Charleston General Hospital[1-3]	Charleston, W. Va.	W. A. Thornhill, Jr.	2,396	56	2	5	3	225
Memorial Hospital[1-3]	Charleston, W. Va.	W. C. Stewart	2,316	66	1	3	3	250
Cabell Huntington Hospital[1-3]	Huntington, W. Va.	W. E. Bray	2,600	730	1	3	1	250
Chesapeake and Ohio Hospital[1-3-323]	Huntington, W. Va.	J. F. Otto, Jr.	2,490	38	3	6	1	200
Ohio Valley General Hospital[1-3]	Wheeling, W. Va.	C. H. Hiles	3,063	91	2	6	3	300
Memorial Medical Center	Williamson, W. Va.		.....	..	..	..	3	..
La Crosse Lutheran Hospital[1-3]	La Crosse, Wis.	T. E. Gundersen	1,375	11	1	2	2	..
Madison General Hospital[1-3]	Madison, Wis.	A. J. Richtsmeier	2,589	105	2	2	1	175
St. Mary's Hospital[1-391]	Madison, Wis.	R. R. Allin	1,984	79	1	3	3	250
University Hospitals[1-3-390]	Madison, Wis.	O. O. Meyer	5,281	105	6	27	3	100
Columbia Hospital[1-3-389]	Milwaukee	H. W. Pohle	2,840	106	1	3	2	270
Milwaukee County Hospital[1-3]	Milwaukee	W. W. Engstrom	6,881	206	8	24	3	216
Milwaukee Hospital[1-3-391]	Milwaukee	E. R. Daniels	2,625	91	1	2	3	270
Mount Sinai Hospital[1-3]	Milwaukee	N. Grossman	2,193	50	3	4	2	..
St. Joseph's Hospital[1]	Milwaukee	P. La Bissoniere	1,223	31	1	3	2	300
St. Luke's Hospital[1-3]	Milwaukee	J. Meyer	1,100	40	2	2	1	325
St. Mary's Hospital[1-3]	Milwaukee	M. C. E. Lindert	1,416	83	2	3	1	300
Veterans Admin. Hospital[1-3-26-101]	Milwaukee (Wood), Wis.	M. W. Garry	3,622	270	3	9	3	271

9. NEUROLOGICAL SURGERY

Residency programs in the following hospitals have been approved by the Council and the American Board of Neurological Surgery, through the Residency Review Committee for Neurological Surgery, as offering acceptable training in the specialty.

Hospitals, 121; Residencies, 366

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered[8]	Total Residencies Offered[8]	Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES NAVY								
Army Medical Center[1-3]	Washington, D. C.	G. J. Hayes	751	37	1	4	4	...
NONFEDERAL AND VETERANS ADMINISTRATION								
University of Alabama Medical Center		...	.....	..	..	..	3	...
University Hospital and Hillman Clinic[1-3]	Birmingham, Ala.	J. G. Galbraith	1,071	27	1	3	..	143
Veterans Admin. Hospital[1-3-88]	Long Beach, Calif.	J. D. French	186	17	1	3	4	271
Los Angeles County Hospital[1]	Los Angeles	H. G. Crockett	2,171	145	1	5	4	259
University of California Medical Center		W. E. Stern	.....	..	..	..	4	...
University Hospital[1-3]	Los Angeles	...	311	8	1	4	..	229
Veterans Admin. Hospital[1-3]	Los Angeles	...	368	24	..	2	..	270
White Memorial Hospital[1-3-53]	Los Angeles	P. J. Vogel	447	19	1	4	4	215
Collis P. and Howard Huntington Memorial Hospital[1-3]	Pasadena, Calif.	C. H. Shelden, R. H. Pudenz	535	23	1	4	4	300
University of California Hospitals		...	.....	..	..	..	4	...
Franklin Hospital[1]	San Francisco	...	.....	..	..	..	..	...
University of California Hospital[1]	San Francisco	J. E. Adams	666	27	2	8	..	231
Veterans Admin. Hospital[1-3]	San Francisco	O. W. Jones, Jr.	189	16	..	1	..	412
University of Colorado Medical Center		...	.....	..	..	..	4	...
Colorado General Hospital[1-3]	Denver	K. Welch	323	11	1	4	..	180
Denver General Hospital[1-3]	Denver	C. G. Freed	245	8	..	..	..	179
Veterans Admin. Hospital[1-3]	Denver	W. K. Welch	143	4	1	1	..	254
Yale-New Haven Medical Center		...	.....	..	..	..	4	...
Hartford Hospital[1-3]	Hartford, Conn.	[illegible]	1,207	53	..	5	..	125
Grace-New Haven Community Hospital[1-3]	New Haven, Conn.	[illegible]	544	22	..	2	..	50

Numerical and other references will be found on pages 788 through 790.

9. NEUROLOGICAL SURGERY—Continued

Name of Hospital	*Location*	*Chief of Service*	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Length of Approved Program (Years)	Beginning Stipend (Month)
Georgetown University Affiliated Hospitals			.....	..	..	..	4	...
Children's Hospital [1-3]	Washington, D. C.		56	3	..	..	..	...
District of Columbia General Hospital [1-3]	Washington, D. C.	J. W. Watts, O. H Fulcher	Incl. in Neur.		..	2	..	38
Georgetown University Hospital [1-3-180]	Washington, D. C.	O. H. Fulcher	280	16	1	2	..	175
George Washington University Hospitals			.....	..	..	..	4	...
Children's Hospital [1-3]	Washington, D. C.		56	3	..	..	..	...
District of Columbia Hospital [1-3]	Washington, D. C.	J. W. Watts, O. H. Fulcher	Incl. in Neur.		..	2	..	38
George Washington University Hospital [1-3-133]	Washington, D. C.	J. W. Watts	838	38	1	4	..	150
Emory University Affiliated Hospitals		E. F. Fincher	.....	..	..	..	4	...
Grady Memorial Hospital [1]	Atlanta, Ga.		243	9	1	4	..	225
Emory University Hospital	Emory University, Ga.		327	14	1	4	..	225
Medical College of Georgia Hospitals			.....	..	..	..	4	...
Eugene Talmadge Hospital [1-4]	Augusta, Ga.		.....	..	..	..	..	...
University Hospital [1]	Augusta, Ga.		.....	..	..	..	..	...
Veterans Admin. Hospital [1-3]	*Augusta, Ga.*		.....	..	..	..	..	...
Loyola University (Stritch School of Medicine) Affiliated Hospitals			.....	..	..	..	4	...
Mercy Hospital [1-3]	Chicago	H. C. Voris	349	8	1	4	..	225
Veterans Admin. Hospital [1-3]	Hines, Ill.	H. Voris, E. Oldberg	385	26	1	2	..	270
Northwestern University Medical Center			.....	..	..	..	4	...
Chicago Wesley Memorial Hospital [1-3]	Chicago	P. C. Bucy	810	12	..	3	4	125
Passavant Memorial Hospital [1-3]	Chicago	L. Davis	131	7	..	1	..	125
Veterans Admin. Research Hospital [1-3]	Chicago	L. Davis	228	16	1	2	..	271
Evanston Hospital [1-3]	Evanston, Ill.	J. Tarkington	93	7	1	1	..	225
Presbyterian-St. Luke's Hospital [1-3-411]	Chicago	E. Oldberg	179	5	..	1	3	125
University of Chicago Clinics [1-3]	Chicago	J. P. Evans	395	30	2	6	4	300
University of Illinois Research and Educational Hospitals [1-3]	Chicago	E. Oldberg	Incl. in Neur.		..	..	4	...
Indiana University Medical Center		R. F. Helmburger	.....	..	..	..	4	...
Indiana University Medical Center Hospital [1]	Indianapolis		494	24	1	5	..	225
Veterans Admin. Hospital [1-3]	Indianapolis		.....	..	..	..	..	271
State University of Iowa Hospitals [1-3]	Iowa City	R. Meyers	641	33	..	3	4	300
University of Kansas Medical Center [1-3]	Kansas City, Kan.	W. Williamson	483	27	1	4	4	125
University of Louisville Medical Center			.....	..	..	..	4	...
Children's Hospital	Louisville, Ky.		.....	..	..	..	..	...
Louisville General Hospital [1-3]	Louisville, Ky.	R. G. Spurling	1,200	51	1	4	..	165
Norton Memorial Infirmary [1-3]	Louisville, Ky.		220	6	..	..	..	...
Veterans Admin. Hospital [1-3]	Louisville, Ky.	E. Grantham	156	11	1	2	..	270
Charity Hospital of Louisiana Tulane University Unit [1]	New Orleans	R. C. Llewellyn	215	11	..	1	1	175
Ochsner Foundation Hospital [1-3-173]	New Orleans	D. H. Echols	403	10	1	4	4	225
Johns Hopkins Hospital [1-3]	Baltimore	A. E. Walker	790	25	2	6	4	25
Baltimore City Hospitals [1-3]	Baltimore	J. D. McQueen	233	10	..	1	..	150
University Hospital [1]	Baltimore		.....	..	..	..	4	...
Boston City Hospital [1]	Boston	W. Wegner	389	15	1	4	4	132
Children's Medical Center [1-3]	Boston	F. D. Ingraham	510	17	1	4	4	42
Peter Bent Brigham Hospital [1-3]	Boston	F. D. Ingraham	Incl. in Surg.		..	4	..	83
Massachusetts General Hospital [1-3]	Boston	J. C. White	887	..	..	..	4	67
Veterans Admin. Hospital [1-3]	Boston (Jamaica Plain)	J. H. Drew	355	22	..	..	..	292
New England Center hospital [1-3]	Boston	B. Silverstone	307	8	1	4	4	100
University Hospital [1-3]	Ann Arbor, Mich.	E. A. Kahn	777	51	1	6	4	195
Grace Hospital [1-3-222]	*Detroit*	E. S. Gurdjian	493	30	1	6	4	275
Henry Ford Hospital [1-3]	Detroit	R. S. Knighton	588	26	1	4	4	255
University of Minnesota Hospitals [1-3-231]	Minneapolis	W. T. Peyton	535	15	2	6	4	220
Mayo Foundation [1]	Rochester, Minn.	J. G. Love	2,960	59	6	24	4	175
University of Mississippi Medical Center		O. J. Andy	.....	..	..	..	4	...
University Hospital [1-3]	Jackson, Miss.		426	20	1	4	..	250
Veterans Admin. Hospital [1-3]	Jackson, Miss.		70	..	..	..	..	271
Barnes Hospital [1-3]	St. Louis	H. G. Schwartz	518	26	1	4	4	50
Dartmouth Medical School Affiliated Hospitals		R. G. Fisher	.....	..	..	..	4	...
Mary Hitchcock Memorial Hospital [1-3]	Hanover, N. H.		597	31	1	4	..	218
Veterans Admin. Hospital [1-3]	White River Jct., Vt.		597	31	1	4	..	218
Albany Hospital [1-3]	Albany, N. Y.	[illegible]	904	37	1	4	4	160
Kings County Hospital [1-3-262]	Brooklyn, N. Y.	[illegible]	3,523	97	1	4	4	125
Long Island College Hospital [1-3]	Brooklyn, N. Y.		.....	..	1	1	..	156
Buffalo General Hospital [1-3]	Buffalo	W. B. Hamby	481	28	2	4	4	175
Albert Einstein College of Medicine Affiliated Hospitals			.....	..	..	..	4	...
Bronx Municipal Hospital Center [1-3-297]	New York City	L. M. Davidoff	177	28	1	4	..	115
Montefiore Hospital [1-3]	New York City	C. A. Cartons	487	24	1	4	..	...
Bellevue Hospital Center Div. IV—New York University Post-Graduate Medical School [1-3-273]	New York City	T. I. Hoen	225	10	2	8	4	125
Mount Sinai Hospital [1-3]	New York City	S. W. Gross	134	10	1	3	4	75
New York Hospital [1-3]	New York City	B. S. Ray	653	..	..	3	4	155
Presbyterian Hospital (Neurological Institute) [1]	New York City	J. L. Pool	1,050	45	4	9	4	293
St. Vincent's Hospital [1-3]	New York City	C. G. De Gutierrez-Mahoney	838	17	1	4	4	125
Veterans Admin. Hospital (Bronx) [1-3-203]	New York City	J. E. Scarff	290	14	1	4	4	263
Strong Memorial—Rochester Municipal Hospital [1-3]	Rochester, N. Y.	F. P. Smith	451	..	..	2	4	117
Duke University Affiliated Hospitals			.....	..	..	..	4	...
Duke Hospital [1-3]	Durham, N. C.	B. Woodhall	1,081	35	1	6	..	127
Veterans Admin. Hospital [1-3]	Durham, N. C.	B. Nashold, Jr.	355	30	1	2	..	270
North Carolina Baptist Hospital [1-3]	Winston-Salem, N. C.	E. Alexander, Jr.	704	30	1	4	4	166
University of Cincinnati College of Medicine Hospital Group			.....	..	..	..	4	...
Children's Hospital [1]	Cincinnati		.....	..	..	..	..	...
Christ Hospital [1-3]	Cincinnati	F. H. Mayfield	483	17	..	1	..	300
Cincinnati General Hospital [1-3]	Cincinnati	R. L. McLaurin	283	47	2	5	..	200
Good Samaritan Hospital [1-3]	Cincinnati	F. H. Mayfield	159	10	..	1	..	300
Veterans Admin. Hospital [1-3]	Cincinnati	R. L. McLaurin	157	11	..	..	..	271
Cleveland Clinic Hospital [1-3]	Cleveland	W. J. Gardner	852	33	2	5	4	275

Numerical and other references will be found on pages 788 through 790.

9. NEUROLOGICAL SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered *	Total Residencies Offered *	Length of Approved Program (Years)	Beginning Stipend (Month)
University Hospitals of Cleveland 1-3	Cleveland	F. E. Nulsen	373	20	..	4	..	...
Cleveland [illegible] Hospital 1-3	Cleveland	B. M. Bloor	173	5	..	..	..	188
Veterans [illegible]	Cleveland	F. E. Nulsen	102	8	1	4	..	271
Ohio State			.....	..	..	..	4	...
Children's Hospital			.....	..	..	..	..	...
University Hospitals 1-3		H. E. Le Fever	709	18	..	3	..	202
White Cross Hospital 1-3		W. E. Hunt	747	21	1	2	..	290
University of Oklahoma Medical Center		J. D. Herrmann	.....	..	3	4	4	...
University Hospital 1-3-310	Oklahoma City		172	8	..	4	..	200
Good Samaritan Hospital 1-3	Portland, Ore.	J. Raaf	1,017	32	1	5	4	275
University of Oregon Medical School Affiliated Hospitals		G. Austin	.....	..	..	..	4	...
University of Oregon Medical School Hospitals and Clinics 1-3	Portland, Ore.		323	27	1	4	..	125
Veterans Admin. Hospital 1-3	Portland, Ore.		139	9	..	1	..	270
Graduate Hospital of the University of Pennsylvania 1-3	Philadelphia	R. A. Groff	186	28	1	3	4	100
Hospital of the University of Pennsylvania 1-3	Philadelphia	R. Groff	201	33	1	4	4	100
Jefferson Medical College Hospital 1-3	Philadelphia	R. Jaeger	127	14	1	4	4	100
Temple University Hospital 1-3	Philadelphia	M. Scott	757	14	1	4	4	...
Health Center Hospitals of the University of Pittsburgh School o[illegible]			1,537	108	..	6	4	...
Allegheny General		J. F. Grunnagle	.....	...	..	..	..	125
Children's Hospita		J. F. Grunnagle	.....	...	..	..	..	...
Presbyterian-Womc		S. N. Rowe	.....	...	..	..	..	125
Mercy Hospital 1-3		F. H. Bragdon	635	19	1	3	3	235
University of Tennessee Medical Center Hospitals			.....	...	..	..	4	...
Baptist Memorial Hospital 1-3	Memphis, Tenn.		.....	...	..	..	..	325
City of Memphis Hospitals 1-3	Memphis, Tenn.	F. Murphy	312	17	1	2	..	150
Vanderbilt University Hospital 1-3	Nashville, Tenn.	W. Meacham	705	18	1	4	4	50
University of Texas Medical Branch Hospitals 1-3	Galveston, Texas	S. R. Snodgrass	521	19	1	4	4	160
Baylor University College of Medicine Affiliated Hospitals			.....	...	..	..	4	...
Jefferson Davis Hospital 1-3	Houston, Texas	K. Bradford	150	21	1	2	..	137.50
Methodist Hospital 1-3	Houston, Texas	J. Greenwood, Jr.	800	23	1	3	..	220
Veterans Admin. Hospital 1-3	Houston, Texas	J. W. Robertson	226	22	2	4	..	270
University of Vermont Affili[illegible]		L. Wallman	48	...	1	4	4	200
De Goesbriand Memorial			.....	...	..	..	..	...
Mary Fletcher Hospital 1			.....	...	..	..	..	...
University of Virginia Hospitals			.....	...	..	..	4	...
University Hospital 1-3	Charlottesville, Va.	W. G. Crutchfield	882	9	1	4	..	75
Veterans Admin. Hospital 1-3	Richmond, Va.	J. L. Ulmer	227	11	1	2	..	271
Medical College of Virginia-Hospital Division 1-3	Richmond, Va.	J. M. Meredith	1,191	36	1	4	4	75
University of Washington Affiliated Hospitals			.....	...	..	..	4	...
King County Hospital Unit No. 1 (Harborview) 1-3	Seattle	A. A. Ward, Jr.	303	62	1	4	..	236
University Hospital	Seattle		.....	...	..	..	..	...
Veterans Admin. Hospital 1-3	Seattle		.....	...	..	..	..	...
University Hospitals 1-3	Madison, Wis	T C. Erickson	396	33	1	4	4	100

10. NEUROLOGY

Residency programs in the following hospitals have been approved for THREE years of training by the Council and the American Board of Psychiatry and Neurology, through the Residency Review Committee for Psychiatry and Neurology. (Applicants intending to qualify for examination by the American Board of Psychiatry and Neurology, Inc., should refer to the Board requirements that the candidate have had at least two of the three years of his training in a program or programs approved at the two or three year level.)

Hospitals, 79; Residencies, 368

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered *	Total Residencies Offered *	Beginning Stipend (Month)
UNITED STATES ARMY							
Army Medical Center 1-3	Washington, D. C.	H. W. Hogan	630	6	2	6	...
NONFEDERAL AND VETERANS ADMINISTRATION							
University of California Hospitals 1-3	Los Angeles	A. S. Rose	101	10	2	3	229
Veterans Admin. Hospital 1-3	Los Angeles	R Baker	426	11	..	2	270
White Memorial Hospital 1-3	Los Angeles	L. B. Mann	244	10	1	1	215
Stanford Medical Center and Associated Hospitals		H. Newman	...	..	1	1	175
Palo Alto-Stanford Hospital Center	Palo Alto, Calif.		...	..	..	..	...
Veterans Admin. Hospital	Palo Alto, Calif.		...	..	..	..	...
University of California Hospitals 1-104	San Francisco	R. B. Aird	774	5	4	8	231
Veterans Admin. Hospital 1-3-111	San Francisco	H. W. Newman	189	3	1	4	271
University of Colorado Medical Center							
Colorado General Hospital 1-3	Denver	L. E. Daniels	207	16	1	3	180
Denver General Hospital 1-3	Denver	L. E. Daniels	65	12	..	..	179
Veterans Admin. Hospital 1-3	Denver	W. V. Huber	549	40	1	2	254
Yale-New Haven Medical Center							
Grace-New Haven Community Hospital 1-3	New Haven, Conn.	G. H. Glaser	558	39	1	3	300
Veterans Admin. Hospital 1-3	West Haven, Conn.	L. L. Levy	193	10	2	3	254
Georgetown University Hospital 1-3-120	Washington, D. C.	D. S. O'Doherty	151	6	2	5	175
Veterans Admin. Hospital 1-3-138	Washington, D. C.	H. F. Corson	128	4	2	4	270
Jackson Memorial Hospital 1-3	Miami, Fla.	P. Scheinberg	684	56	4	10	250
Northwestern University Medical Center 1-3	Chicago	B. Boshes	534	7	3	9	...
Chicago Wesley Memorial Hospital 1-3	Chicago	B. Boshes	401	2	1	1	125
Veterans Admin. Research Hospital 1-3	Chicago	H. Koenig	133	5	1	2	271
Veterans Admin. Hospital 1-3	Hines, Ill.	E. Tigay	991	43	..	2	270
Presbyterian-St. Luke's Hospital 1-3-411	Chicago	F. J. Gerty	267	9	1	3	125
University of Chicago Clinics 1-3	Chicago	R. B. Richter	316	10	1	4	200

Numerical and other references will be found on pages 788 through 790.

10. NEUROLOGY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered[8]	Total Residencies Offered[8]	Beginning Stipend (Month)
University of Illinois Research and Educational Hospitals[1-3]	Chicago	E. Oldberg	578	30	..	5	165
Indian [illegible] als							
Mari [illegible]-3	Indianapolis	A. T. Ross	207	29	1	1	210
Indi [illegible]1	Indianapolis	A. T. Ross	8	..	2	8	225
State [illegible]1-3-130	Iowa City	A. L. Sahs	1,237	23	2	4	175
Vetei [illegible]	Iowa City	M. W. Van Allen	407	15	1	1	270
Univer [illegible] r[1-3]	Kansas City, Kan.	A. T. Steegmann	333	8	4	9	125
Veterans Admin. Hospital[1-3]	*Kansas City, Mo.*	A. B. Williamson	336	18	..	..	271
University of Louisville Affiliated Hospitals							
Louisville General Hospital[1-3]	Louisville, Ky.	E. Roseman	920	84	1	3	125
Veterans Admin. Hospital[1-3]	Louisville, Ky.	E. Roseman	211	15	1	1	270
Charity Hospital of Louisiana							
Louisiana State University Unit[1]	New Orleans	R. Paddison	196	9	1	3	100
Tulane University Unit[1]	New Orleans	R. G. Heath	765	18	1	3	100
Baltimore City Hospitals[1-3]	Baltimore	J. W. Magladery	741	56	2	3	125
Johns Hopkins Hospital[1-3]	Baltimore	J. W. Magladery	Incl. in Int. Med.		..	3	25
University Hospital[1]	Baltimore		...	..	..	..	...
Boston City Hospital[1]	Boston	D. E. Denny-Brown	380	10	..	15	132
Massachusetts General Hospital[1-3]	Boston	R. D. Adams	1,034	..	..	..	67
New England Center Hospital[1-3]	Boston	J. F. Sullivan	430	1	..	9	100
Veterans Admin. Hospital[1-3]	Boston (Jamaica Plain)	F. A. Quadfasel	706	28	4	12	271
University Hospital[1-3-215]	Ann Arbor, Mich.	R. N. De Jong	739	11	4	14	100
Henry Ford Hospital[1-3]	Detroit	L. D. Proctor	281	10	1	3	300
Wayne University School of Medicine Affiliated Hospitals							
Veterans Admin. Hospital[1-3]	Dearborn, Mich.		....	..	..	..	...
Detroit Memorial Hospital[1-3]	Detroit		....	..	..	..	...
Lafayette Clinic[1-3]	Detroit	J. S. Meyer	64	..	..	..	...
Receiving Hospital[1-3]	Detroit		...	..	..	..	...
University of Minnesota Hospitals							
Minneapolis General Hospital	Minneapolis						
University Hospital[1-3-227]	Minneapolis	A. B. Baker	538	15	3	11	317
Veterans Admin. Hospital[1-3]	Minneapolis	R. C. Gray	936	22	3	6	271
Mayo Foundation[1]	Rochester, Minn	K. B. Corbin	4,073	29	6	20	175
Barnes Hospital[1-3]	St. Louis	J. L. O'Leary	746	20	2	5	60
Albany Medical School Affiliated Hospitals							
Albany Hospital[1-3-258]	Albany, N. Y.	F. Hesser	533	14	2	6	160
Veterans Admin. Hospital[1]	Albany, N. Y.	J. H. Cullen	271	15	1	3	271
Kings County Hospital[1-3]	Brooklyn, N. Y.	E. F. Vastola	1,634	44	..	..	145
Bellevue Hospital Center							
Div. *II—Cornell University*[1-3-298]	New York City	F. McDowell	Incl. in Neuro-Surg.		1	4	175
Div. III—New York University College of Medicine[1-3-305]	New York City	M. B. Bender	274	..	5	12	145
Bronx Municipal Hospital Center[1-3]	New York City	S. R Korey	474	41	2	6	145
Montefiore Hospital[1-3]	New York City	T. Lawyer	533	20	4	8	187
Mount Sinai Hospital[1-3]	New York City	M. B. Bender	640	30	5	14	75
New York Hospital[1-3]	New York City	H. G. Wolff	Incl. in Int. Med.		..	1	206
Presbyterian Hospital (Neurological Institute)[1]	New York City	H. H. Merritt	2,507	40	6	15	250
Veterans Admin. Hospital (Bronx)[1-3-287]	*New York City*	C. Booth	470	24	1	3	271
State University of New York-Upstate Medical Center							
University Hospitals[1-3]	Syracuse, N. Y	P. Duffy	....	..	..	..	...
Veterans Admin Hospital[1-3]	Syracuse, N. Y.		....	..	..	..	...
North Carolina Memorial Hospital[1-3]	Chapel Hill, N. C.	T. W. Farmer	300	13	2	6	175
Duke Hospital[1-4]	Durham N. C.	E. C. Kunkle	385	1	1	5	200
North Carolina [illegible]	N. C.	M. Netsky	316	8	1	3	300
University of Ci [illegible]							
Cincinnati General Hospital[1-3]	Cincinnati	C. Aring	311	56	2	6	...
Veterans Admin. Hospital[1-3]	Cincinnati		....	..	..	..	...
Cleveland Clinic Hospital[1-3]	Cleveland	G. H. Williams, Jr.	357	17	1	2	225
University Hospitals[1-3]	Cleveland	C. Randt	240	1	2	5	155
Hospital of the University of Pennsylvania[1-3]	Philadelphia	G. Gammon	449	10	4	10	150
Jefferson Medical College Hospital[1-3]	Philadelphia	B. J. Alpers	600	10	2	3	100
Philadelphia General Hospital[1-3]	Philadelphia	A. M. Ornsteen	1,338	172	2	5	121
Veterans Admin. Hospital[1-3]	Pittsburgh	E L. Youngue, Jr.	233	19	2	5	271
Baylor University College of [illegible]		W. S. Fields	.....	...	..	..	...
Jefferson Davis Hospital [illegible]	[illegible] Texas		106	12	1	1	...
Methodist Hospital[1-3]	*Houston, Texas*		190	4	..	1	220
Veterans Admin. Hospital[1-3]	Houston, Texas		420	28	1	3	270
University of Vermont Affiliated Hospitals		G. A. Schumacher	420	15	2	6	450
De Goesbriand Memorial Hospital[1-3]	Burlington, Vt.		....	..	..	..	...
Mary Fletcher Hospital[1-3]	Burlington, Vt.		....	..	..	..	...
University of Washington Affiliated Hospitals							
King County Hospital Unit No. 1 (Harborview)[1-3]	Seattle	F. Plum	735	107	3	9	150
University Hospital	Seattle		....	..	..	..	...
Veterans Admin. Hospital[1-3]	Seattle	H. Leffman	187	9	1	1	271
University Hospitals[1-3]	Madison, Wis.	F. M. Forster	554	6	6	12	100

Residency programs in the following hospitals have been approved for TWO years of training by the Council and the American Board of Psychiatry and Neurology, through the Residency Review Committee for Psychiatry and Neurology. (Applicants intending to qualify for examination by the American Board of Psychiatry and ***Neurology, Inc., should refer to the Board requirements that the candidate have had at least two of the three*** **years of his training in a program or programs approved at the two or three year level.)**

Hospitals, 21; Residencies, 48

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered[8]	Total Residencies Offered[8]	Beginning Stipend (Month)
UNITED STATES ARMY							
Letterman Army Hospital[1-3]	San Francisco	W. E. Porter	337	8	2	4	...
Fitzsimons Army Hospital[1-3]	Denver	E. W. Eberlin	201	1	1	2	...
UNITED STATES NAVY							
U. S. Naval Hospital[1-4]	Bethesda, Md.	J. E. Nardini	322	4	1	2	...

10. NEUROLOGY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
UNITED STATES PUBLIC HEALTH SERVICE							
National Institutes of Health-Clinical Center [1-3]	Bethesda, Md.	M. Shy	575	12	..	4	...
NONFEDERAL AND VETERANS ADMINISTRATION							
University of Alabama Medical Center							
Crippled Children's Hospital [1-3]	Birmingham, Ala.		...	..	..	..	...
University Hospital and Hillman Clinic [1-3]	Birmingham, Ala.	W. S. Littlejohn	121	2	2	3	143
Veterans Admin. Hospital [1-3]	Birmingham, Ala.	J. Tucker	169	10	1	1	271
Veterans Admin. Hospital [1-3-82]	Long Beach, Calif.	M. Feld	318	32	1	3	271
Los Angeles County Hospital [1]	Los Angeles		...	..	..	..	...
Veterans Admin. Hospital [3]	Oakland, Calif.	J. K. Smith	229	24	3	6	270
District of Columbia General Hospital [1-3]	Washington, D. C.	D. O'Doherty, H. Stevens	610	21	2	5	233
Buffalo General Hospital [1-3]	Buffalo, N. Y.	I. Hyman	140	4	1	1	175
Edward J. Meyer Memorial Hospital [1-3]	Buffalo, N. Y.	B. H. Smith	301	6	1	2	247
Ohio State University Hospitals							
University Hospital [1-3]	Columbus, Ohio	D. M. Palmer	Incl. in Int. Med.		1	2	177
University of Oklahoma Medical Center		S. G. Wolf	...	..	..	..	...
University Hospitals [1-3]	Oklahoma City		Incl. in Int. Med.		..	..	...
Veterans Admin. Hospital [1]	Oklahoma City		169	7	..	..	271
University of Oregon Medical School							
Hospitals and Clinics [1-3]	Portland, Ore.	R. L. Swank	118	28	1	1	125
City of Memphis Hospitals [1-3]	Memphis	I. F. Tullis	60	1	..	1	150
Vanderbilt University Hospital [1-3]	Nashville, Tenn.	B. E. Sprofkin	...	3	1	2	50
Veterans Admin. Hospital [1-3]	Salt Lake City		...	..	..	..	...
University of Virginia Hospital [1-3]	Charlottesville, Va.	T. R. Johns	209	6	2	6	250

Residency programs in the following hospitals have been approved for ONE year of training by the Council and the American Board of Psychiatry and Neurology, through the Residency Review Committee for Psychiatry and Neurology. (Applicants intending to qualify for examination by the American Board of Psychiatry and Neurology, Inc., should refer to the Board requirements that the candidate have had at least two of the three years of his training in a program or programs approved at the two or three year level.)

Hospitals, 20; Residencies, 35

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
UNITED STATES NAVY							
U. S. Naval Hospital [1]	Philadelphia	C. S. Mullin	171	2	1	1	...
NONFEDERAL AND VETERANS ADMINISTRATION							
George Washington University Hospital [1-3-132]	Washington, D. C.	H. Stevens	573	22	1	5	150
Cook County Hospital [1-3]	Chicago	W. Kirschbaum	173	..	2	2	140
Veterans Admin. Hospital [1-3]	Topeka, Kan.	M. R. Shaver	205	5	1	1	271
Lemuel Shattuck Hospital [1-3-53]	Boston		...	..	..	..	...
Massachusetts Memorial Hospitals [1-3]	Boston	C. A. Kane	Incl. in Int. Med.		1	1	175
St. Louis City Hospital [1-3]	St. Louis	W. Kempinsky, L. Tureen	702	75	3	5	234
Veterans Admin. Hospital [1-3]	Omaha, Neb.	F. A. Majka	359	16	1	2	270
Veterans Admin. Hospital [1-3]	East Orange, N. J.	W. O. Howard	396	54	..	1	270
Jewish Chronic Disease Hospital [1-3]	Brooklyn, N. Y.	A. M. Rabiner	572	17	1	3	200
Fordham Hospital [1-3]	New York City	J. H. Friedman	168	2	1	1	145
Goldwater Memorial Hospital							
New York University—Division III [1-3]	New York City		...	..	..	..	...
Lenox Hill Hospital [1-3]	New York City	A. Bell	341	8	1	1	180
New York Medical College—Metropolitan Medical Center							
Metropolitan Hospital [1-3]	New York City	I. Tarlov	149	2	3	3	125
Veterans Admin. Hospital (Manhattan) [1-3]	New York City	R. L. Silver	228	21	..	2	271
Graduate Hospital of the							
University of Pennsylvania [1-3]	Philadelphia	A. Tornay	291	4	1	1	100
Teaching Hospitals of the Medical College of							
South Carolina [1]	Charleston, S. C.		243	3	1	2	137
University of Texas							
Medical Branch Hospitals [1-3]	Galveston, Texas	T. H. Harris	Incl. in Int. Med.		1	1	160
Veterans Admin. Hospital [1-3]	Richmond, Va.	A. Davis	290	13	2	2	271

11. OBSTETRICS AND GYNECOLOGY

Residency programs in the following hospitals have been approved by the Council, the American Board of Obstetrics and Gynecology and the American College of Surgeons, through the *Residency Review Committee* for Obstetrics and Gynecology, as offering acceptable training in the specialty.

Hospitals, 477; Residencies, 2594

Name of Hospital	Location	Chief of Service	Residencies Approved	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES AIR FORCE									
U. S. Air Force Hospital	San Antonio, Texas		OBG	.....	..	..	..	3	...
UNITED STATES ARMY									
Letterman Army Hospital [1-3]	San Francisco	H. M. Jesurun	OBG	3,997	42	2	6	3	...
Fitzsimons Army Hospital [1-3-116]	Denver	J. S. Zelenik	OBG	2,323	3	2	6	3	...
Army Medical Center [1-3]	Washington, D. C.	H. L. Riva	OBG	2,685	25	3	9	3	...
Tripler Army Hospital [1-3]	Honolulu, Hawaii	E. A. Zimmermann	OBG	4,284	..	3	9	3	...
William Beaumont Army Hospital [1-3]	El Paso, Texas	A. K. Schoenbucher	OBG	3,607	46	3	9	3	...
Brooke Army Hospital [1-3]	San Antonio, Texas	J. J. Young	OBG	2,341	8	2	6	3	...
Madigan Army Hospital [1-3]	Tacoma, Wash.	H. E. Harrison	OBG	3,568	2	2	6	3	...

Numerical and other references will be found on pages 788 through 790.

11. OBSTETRICS AND GYNECOLOGY—Continued

Name of Hospital	Location	Chief of Service	Residencies Approved	Inpatients Treated	Autopsies	First Year Residencies Offered [9]	Total Residencies Offered [9]	Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES NAVY									
U. S. Naval Hospital $^{1-3}$	Oakland, Calif.	R. W. Tandy	OBG	2,261	4	2	6	3	...
U. S. Naval Hospital ^{1}	San Diego, Calif	W. S. Baker, Jr.	OBG	3,903	10	2	6	3	...
U. S. Naval Hospital $^{1-3}$	Great Lakes, Ill.	R. A. Christensen	OBG	1,489	..	1	3	3	...
U. S. Naval Hospital $^{1-3}$	Bethesda, Md.	....	OBG	2,289	7	2	6	3	...
U. S. Naval Hospital $^{1-3}$	Chelsea, Mass.	D. M. Shook	OBG	1,634	2	1	3	3	...
U. S. Naval Hospital ^{1}	St. Albans, N. Y.	J. W. Huston	OBG	1,650	2	1	3	3	...
U. S. Naval Hospital ^{1}	Philadelphia	H. J. Hunter	OBG	1,841	1	1	3	3	...
U. S. Naval Hospital $^{1-3}$	Portsmouth, Va.	D A. Callagan	OBG	3,685	6	2	6	3	...
UNITED STATES PUBLIC HEALTH SERVICE									
U. S. Public Health Service Hospital	New Orleans	....	OBG	.....	..	..	..	3	...
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE									
Freedmen's Hospital $^{1-3}$	Washington, D. C	J. F. Clark	OBG	5,108	7	3	7	3	308
OTHER FEDERAL									
Gorgas Hospital ^{1}	Ancon, C. Z.	I. J. Strumpf	OBG	2,162	47	1	3	8	300
NONFEDERAL									
Carraway Methodist Hospital ^{1}	Birmingham, Ala.	T. M. Boulware	OB	2,557	..	1	1	1	250
University of Alabama Medical Center									
University Hospital and Hillman Clinic $^{1-3}$	Birmingham, Ala.	W. N. Jones	OBG	6,606	3	4	11	3	143
Lloyd Noland Hospital $^{1-3-76}$	Fairfield, Ala.	O. T. West	OBG	1,768	2	1	3	3	250
Good Samaritan Hospital ^{1}	Phoenix, Ariz.	C. Van Epps	OBG	4,252	..	2	2	1	300
Maricopa County General Hospital $^{1-3}$	Phoenix, Ariz.	E. Sattenspiel	OBG	2,201	1	1	3	3	300
St. Joseph's Hospital $^{1-3}$	Phoenix, Ariz.	Z. B. Campbell	OBG	6,943	..	1	3	3	250
University Hospital ^{1}	Little Rock, Ark.	W. E. Brown	OBG	4,911	14	3	9	3	160
Kern County General Hospital $^{1-3}$	Bakersfield, Calif	L. E. Smale	OBG	2,668	6	2	5	2	350
Herrick Memorial Hospital $^{1-3}$	Berkeley, Calif.	F. E. Younge	OBG	2,565	2	1	1	1	300
General Hospital of Fresno County $^{1-3}$	Fresno, Calif.	H. L. Tieche	OBG	2,797	5	1	3	3	300
Glendale Sanitarium and Hospital $^{1-3}$	Glendale, Calif.	J. B. Brown	OBG	2,780	1	1	2	2	325
Seaside Memorial Hospital $^{1-3}$	Long Beach, Calif.	P. B Hartley	OBG	3,336	1	1	1	2	275
California Hospital $^{1-3}$	Los Angeles	G. W. Hewitt	OBG	3,383	6	2	6	3	225
Cedars of Lebanon Hospital $^{1-3-89}$	Los Angeles	L. Krohn, G. Rosenblum	OBG	4,786	..	2	4	3	265
Hospital of the Good Samaritan $^{1-3}$	Los Angeles	S. M. Martins	OBG	3,320	3	1	2	3	275
Kaiser Foundation Hospital $^{1-3}$	Los Angeles	T. H. Baker	OBG	4,986	1	3	9	3	225
Los Angeles County Hospital ^{1}	Los Angeles	E. Henriksen	OBG	10,107	37	4	16	3	250
Presbyterian Hospital-Olmsted Memorial $^{1-3}$	Los Angeles	E. J. Krahulik	OBG	4,309	27	6	6	3	200
Queen of Angels Hospital $^{1-3}$	Los Angeles	R. Kelly	OBG	6,267	4	2	6	3	275
University of California Hospital $^{1-3-94}$	Los Angeles	D. G. Morton	OBG	1,897	5	2	8	3	229
White Memorial Hospital $^{1-3-89}$	Los Angeles	E. E. Nichols	OBG	3,013	1	2	8	3	215
Highland-Alameda County Hospital $^{1-3-102}$	Oakland, Calif.	G. F. Calvin	OBG	3,908	10	2	6	3	200
Kaiser Foundation Hospital $^{1-3}$	Oakland, Calif.	R. W. King	OBG	4,259	5	3	9	3	315
Stanford Medical Center and Associated Hospitals									
Palo Alto-Stanford Hospital Center	Palo Alto, Calif.	C. E. McLennan	OBG	.....	..	4	12	3	175
Community Hospital of San Mateo County ^{1}	San Mateo, Calif.	N. D. Morrison, Jr.	OBG	775	4	1	2	1	300
Mercy Hospital $^{1-3}$	San Diego, Calif.	P. L. Martin	OBG	7,403	3	2	6	3	225
San Diego County General Hospital ^{1}	San Diego, Calif	J. A. Rust	OBG	1,279	3	1	2	2	250
Children's Hospital $^{1-3}$	San Francisco	D. A. Dallas	OBG	2,982	2	1	3	3	175
Kaiser Foundation Hospital $^{1-3}$	San Francisco	H. B. Nelson	OBG	3,903	6	2	6	3	200
Mary's Help Hospital $^{1-3}$	San Francisco	H. Schwartz	OBG	2,620	1	2	5	2	225
St. Francis Memorial Hospital $^{1-3}$	San Francisco	C. D. Hart	OBG	2,752	2	3	3	1	300
St. Joseph's Hospital $^{1-3}$	San Francisco	H. Von Geldern	OBG	1,636	..	1	1	1	300
St. Luke's Hospital $^{1-3}$	San Francisco	J. R. Upton	OBG	2,298	..	1	2	2	325
St. Mary's Hospital $^{1-3}$	San Francisco	P. J. Arnot	OBG	3,044	..	1	3	3	200
San Francisco Hospital ^{1}	San Francisco	E. C. Hill	OBG	1,381	5	3	5	1	220
University of California Hospitals ^{1}	San Francisco	E. W. Page	OBG	4,076	13	4	12	3	231
Santa Clara County Hospital $^{1-3}$	San Jose, Calif.	J. C. Muir	OBG	1,699	7	2	6	3	200
St. John's Hospital ^{1}	Santa Monica, Calif.	B. H. Watson	OBG	5,657	2	2	2	2	225
San Joaquin General Hospital ^{1}	Stockton, Calif.	D. Harrington	OBG	1,582	..	2	4	3	200
Harbor General Hospital ^{1}	Torrance, Calif.	D. G. Morton	OBG	3,531	3	2	7	3	250
Presbyterian Hospital $^{1-3}$	Denver	M. C. Waddell	OBG	3,255	..	1	3	1	275
St. Joseph's Hospital $^{1-3-117}$	Denver	W. W. Tucker	OBG	5,295	..	1	3	3	200
University of Colorado Medical Center		....	OBG	.....	..	..	..	3	...
Colorado General Hospital $^{1-3}$	Denver	E. S. Taylor	.....	2,238	10	4	11	..	180
Denver General Hospital $^{1-3}$	Denver	N. P. Isbell	.....	2,300	11	..	..	..	179
Bridgeport Hospital $^{1-3}$	Bridgeport, Conn.	C. Griswold	OB	3,571	..	2	2	1	240
St. Vincent's Hospital $^{1-3}$	Bridgeport, Conn.	F. S. Kinder	OB	3,855	..	2	4	1	300
Hartford Hospital $^{1-3}$	Hartford, Conn.	L. F. Middlebrook	OBG	9,165	6	1	3	3	125
St. Francis Hospital $^{1-3}$	Hartford, Conn.	T. F. McNulty	OBG	4,912	3	1	3	3	175
New Britain General Hospital $^{1-3}$	New Britain, Conn.	D. A Bristoll	OBG	3,428	1	1	3	3	210
Yale—New Haven Medical Center									
Grace-New Haven Community Hospital $^{1-3}$	New Haven, Conn.	C. L. Buxton, J. A. Florito	OBG	7,390	7	4	12	3	50
Hospital of St. Raphael ^{3}	New Haven, Conn.	C. E. Johnson	OBG	4,263	4	2	5	3	150
Lawrence and Memorial Hospitals $^{1-3}$	New London, Conn.	W. J. Morse	OBG	3,403	3	3	3	1	250
Norwalk Hospital $^{1-3}$	Norwalk, Conn.	E. G. Norrington	OBG	3,035	1	1	1	1	195
Delaware Hospital $^{1-3}$	Wilmington, Del.	C. L. Hudiburg	OBG	4,684	3	1	3	3	220
Wilmington General Hospital $^{1-3}$	Wilmington, Del.	I. Slovin	OBG	3,179	1	1	3	2	200
Columbia Hospital for Women and Lying-in Asylum $^{1-3}$	Washington, D. C.	S. W. Hawken, H. J. R. McNitt	OBG	7,944	5	3	9	3	150
District of Columbia General Hospital $^{1-3}$	Washington, D. C.	A. Marchetti, R. Barter	OBG	3,514	12	4	9	3	223
Doctors Hospital $^{1-3}$	Washington, D. C.	J. K. Cromer	OBG	2,579	10	2	3	2	200
Georgetown University Hospital $^{1-3-127}$	Washington, D. C.	A. A. Marchetti	OBG	4,738	1	3	7	3	175

Numerical and other references will be found on pages 788 through 790.

11. OBSTETRICS AND GYNECOLOGY—Continued

Name of Hospital	Location	Chief of Service	Residencies Approved	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
George Washington University Hospital [1-3]	Washington, D. C.	R. H. Barter	OBG	6,801	9	2	8	3	150
Providence Hospital [3]	Washington, D. C.	G. Ellis	OBG	5,805	..	1	4	3	350
Sibley Memorial Hospital [1-3]	Washington, D. C.	M. Kaufman	OBG	2,364	..	2	3	2	200
Washington Hospital Center [1-3]	Washington, D. C.	H. P. Ramsey	OBG	3,209	4	2	8	3	215
Duval Medical Center [1-3]	Jacksonville, Fla.	R. W. McDowell, D. M. Baldwin	OBG	2,932	3	2	4	3	200
St. Luke's Hospital [1-3]	Jacksonville, Fla.	R. W. McDowell, F. Richards	OBG	3,038	..	1	4	2	350
St. Vincent's Hospital [1-3]	Jacksonville, Fla.	J. L. Allgood, V. A. Hughes	OBG	4,841	1	2	6	3	325
Jackson Memorial Hospital [1-3]	Miami, Fla.	J. H. Ferguson	OBG	9,188	17	9	22	3	200
Mount Sinai Hospital of Greater Miami [1-3]	Miami Beach, Fla.	H. Kraff	OBG	2,217	..	1	2	2	250
St. Francis Hospital [1-3†]	Miami Beach, Fla.	J. Heffernan	OBG	2,112	..	1	1	1	215
Orange Memorial Hospital [1]	Orlando, Fla.	F. M. Parish, R. L. Tolle	OBG	4,660	5	1	4	3	325
Mound Park Hospital [1-40]	St. Petersburg, Fla.	F. W. Bachnik	OBG	1,571	..	1	1	1	290
Tampa General Hospital [1-3]	Tampa, Fla.	J. Ingram	OBG	5,396	30	2	6	3	250
Crawford W. Long Memorial Hospital [1-3]	Atlanta, Ga.	R. K. Hancock	OBG	7,879	3	6	10	3	285
Georgia Baptist Hospital [1-3]	Atlanta, Ga.	E. D. Colvin	OBG	6,372	1	2	6	3	305
Grady Memorial Hospital [1]	Atlanta, Ga.	J. Cross	OBG	9,276	10	5	15	3	100
Piedmont Hospital [1]	Atlanta, Ga.	C. B. Upshaw	OBG	3,089	1	1	3	2	290
St. Joseph's Infirmary [1-3]	Atlanta, Ga.	W. V. Skiles	OBG	2,814	2	1	3	3	270
Medical College of Georgia Hospitals			OBG	.....	..	..	..	3	...
Eugene Talmadge Memorial Hospital [1-3]	Augusta, Ga.	I. Bryans	.....	552	3	4	10	..	250
University Hospital [1-3]	Augusta, Ga.	W. G. Watson	.....	4,431	..	2	4	..	200
Macon Hospital [1]	Macon, Ga.	E. Swilling, R. W. Edenfield	.....	5,990	2	1	3	..	250
Memorial Hospital of Chatham County [1-3]	Savannah, Ga.	H. C. Frech	OBG	2,160	21	1	2	2	350
Kapiolani Maternity and Gynecological Hospital—St. Francis Hospital [1-3]	Honolulu, Hawaii	F. Carty, E. Matsuoka	OBG	9,435	4	4	9	3	250
Queen's Hospital [1-3]	Honolulu, Hawaii	R. Y. Sakimoto	OBG	3,788	2	2	3	2	150
Augustana Hospital [1-3]	Chicago	W. A. Boice	OB	1,166	..	3	3	1	200
Chicago Maternity Center [1-3-147]	Chicago	B. E. Tucker, H. B. Benaron	OB	3,457	..	3	11	1	150
Cook County Hospital [1-3]	Chicago	A. Webster, F. Falls	OBG	28,936	202	8	20	3	140
Englewood Hospital [3]	Chicago	C. D. Krause	OB	1,949	..	1	1	1	200
Frank Cuneo Memorial Hospital [3]	Chicago	A. F. Daro	OBG	3,837	25	2	4	1	160
Grant Hospital [1-3]	Chicago	J. P. Fitz-Gibbons	OBG	2,428	2	1	2	2	225
Hospital of St. Anthony De Padua [1-3]	Chicago	J. J. Donlon	OB	1,823	..	2	2	1	250
Illinois Masonic Hospital [1-3]	Chicago	F. J. Roos	OBG	3,361	1	4	4	1	115
Lewis Memorial Maternity Hospital [1-3]	Chicago	H. E. Schmitz	OBG	5,554	7	6	14	3	100
Lutheran Deaconess Home and Hospital [3]	Chicago	A. D. Green	OB	1,650	..	1	1	1	200
Mercy Hospital [1-3-159]	Chicago	H. E. Schmitz	OBG	2,098	8	..	3	3	225
Michael Reese Hospital [1-3]	Chicago	L. E. Frankenthal	OBG	4,702	1	3	10	3	125
Mount Sinai Hospital [1-3]	Chicago	C. Fields	OBG	2,938	3	2	6	3	225
Northwestern University Medical Center									
Chicago Wesley Memorial Hospital [1-3]	Chicago	G. Gardner	OBG	3,164	3	2	7	3	125
Passavant Memorial Hospital [1-3]	Chicago	J. I. Brewer	OBG	2,254	2	2	4	3	125
Evanston Hospital [1-3]	Evanston, Ill.	D. N. Danforth	OBG	3,043	6	1	3	3	225
Presbyterian-St. Luke's Hospital [1-3-411]	Chicago	H. Boysen	OBG	3,057	2	3	9	3	125
Provident Hospital [1-3]	Chicago	R. C. Stepto	OBG	3,403	29	2	5	3	200
St. Anne's Hospital [1-3]	Chicago	R. J. Hawkins	OB	4,882	..	6	6	1	250
St. Elizabeth Hospital [3]	Chicago	L. G. Scheffel	OBG	2,730	..	3	3	1	200
St. Joseph Hospital [1-3]	Chicago	C. J. Geiger	OBG	1,955	..	1	3	3	300
University of Chicago Clinics [1-3]	Chicago	M. E. Davis	OBG	5,349	8	11	20	3	200
Billings Hospital			.....	.....	..	..	..	..	...
Chicago Lying-in Hospital and Dispensary			.....	.....	..	..	..	..	...
University of Illinois Research and Educational Hospitals [1-3]	Chicago	W. F. Mengert	OBG	3,261	8	3	9	3	145
St. Francis Hospital [1-3]	Evanston, Ill.	J. X. Bremner	OBG	4,584	3	1	3	3	260
Little Company of Mary Hospital [1-3]	Evergreen Park, Ill.	P. E. Lawler, W. T. Carlisle	OBG	7,944	16	4	12	3	200
West Suburban Hospital [1-3]	Oak Park, Ill.	F. H. Falls	OBG	4,464	2	2	8	3	225
St. Francis Hospital [1-3]	Peoria, Ill.	W. S. Miller	OBG	5,142	1	1	2	2	225
St. Anthony Hospital [1-3]	Rockford, Ill.	G. T. Burns	OBG	1,855	..	1	1	1	200
Indiana University Medical Center									
Indiana University Medical Center Hospital [1]	Indianapolis	C. P. Huber	OBG	3,945	12	4	16	3	225
Marion County General Hospital [1-3]	Indianapolis	C. F. Gillespie	OBG	4,233	10	2	8	3	210
Methodist Hospital [1]	Indianapolis	L. J. Clark	OBG	7,917	5	2	6	3	278
St. Vincent's Hospital [1-3]	Indianapolis	P. F. Muller	OBG	3,112	1	1	3	3	275
St. Elizabeth Hospital [1]	Lafayette, Ind.	M. E. Harden	OBG	2,955	..	2	3	2	275
State University of Iowa Hospitals [1-3]	Iowa City	J. H. Randall	OBG	2,913	3	3	9	3	175
University of Kansas Medical Center [1-3]	Kansas City, Kan.	L. A. Calkins	OBG	2,825	7	3	10	3	125
St. Francis Hospital [1-3]	Wichita, Kan.	L. E. Woodard	OBG	5,153	2	1	3	1	...
Wesley Hospital [1-3]	Wichita, Kan.	J. Menaker	OBG	5,386	..	1	1	1	295
St. Joseph Hospital [1-3-170]	Lexington, Ky.	J. B. Stith	OBG	1,561	2	1	3	1	230
Central Baptist Hospital			.....	.....	..	..	..	..	...
Good Samaritan Hospital			.....	.....	..	..	..	..	...
Louisville General Hospital [1-3]	Louisville, Ky.	D. M. Haynes	OBG	3,964	2	3	9	3	105
St. Joseph Infirmary [1]	Louisville, Ky.	O. J. Hayes	OBG	4,938	3	1	3	3	210
Charity Hospital of Louisiana									
Independent Unit [1]	New Orleans	A. Jacobs	OBG	5,055	11	3	9	3	100
Louisiana State University Unit [1]	New Orleans	M. L. McCall	OBG	8,343	8	5	15	3	100
Tulane University Unit [1]	New Orleans	C. G. Collins	OBG	7,124	17	5	15	3	100
Ochsner Foundation Hospital [1-3-175]	New Orleans	C. Tyrone	OBG	4,765	1	2	6	3	225
Southern Baptist Hospital [1-3]	New Orleans	J. H. Collins	OBG	5,449	2	3	9	3	225
Touro Infirmary [1]	New Orleans	H. Meyer, C. G. Johnson	OBG	4,053	5	2	6	3	125

Numerical and other references will be found on pages 788 through 790.

11. OBSTETRICS AND GYNECOLOGY—Continued

Name of Hospital	Location	Chief of Service	Residencies Approved	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Length of Approved Program (Years)	Beginning Stipend (Month)
Confederate Memorial Medical Center [1-3]	Shreveport, La.	E. E. Dilworth	OBG	6,553	7	3	9	3	125
Baltimore City Hospitals [1-3]	Baltimore	P. E. Molumphy	OBG	6,603	8	6	18	3	215
Bon Secours Hospital [3]	Baltimore	H. B. McNally, C. B. Marek	OBG	2,926	..	1	4	3	300
Church Home and Hospital [1-3]	Baltimore	J. K. Seegar, Jr.	OB	1,031	..	..	2	1	200
Franklin Square Hospital [1-3]	Baltimore	I. A. Siegel	OBG	2,207	..	1	5	3	125
Hospital for Women [1-3-162]	Baltimore	J. E. Savage, J. D. Woodruff	OBG	6,899	7	4	12	3	200
Johns Hopkins Hospital [1-3]	Baltimore	N. J. Eastman, R. W. Te Linde	OBG	6,921	27	11	25	3	25
Lutheran Hospital [1-3]	Baltimore	W. N. Long, Jr., W. K. Diehl	OBG	3,886	29	4	8	3	220
Maryland General Hospital [1-3]	Baltimore	D. M. Dixon, T. Kardash	OBG	3,594	1	2	6	3	225
Mercy Hospital [1-3]	Baltimore	W. A. Dodd, F. K. Morris	OBG	4,194	9	2	5	3	275
St. Agnes Hospital [1-3]	Baltimore	H. B. McNally, J. C. Dumler	OBG	2,967	1	3	6	3	240
St. Joseph's Hospital [3]	Baltimore	J. B. Boyle, W. A. Dodd	OBG	2,548	1	2	4	3	225
Sinai Hospital [1-3]	Baltimore	I. A. Siegel, A. A. Sondheimer	OBG	5,635	2	4	10	3	110
South Baltimore General Hospital [3]	Baltimore	F. K. Morris	OB	966	..	2	4	2	200
Union Memorial Hospital [1-3-181]	Baltimore	J. M. Haws	OBG	2,206	1	3	5	3	215
University Hospital [1]	Baltimore	....	OBG	.....	..	..	..	3	...
Prince George's General Hospital [1-3]	Cheverly, Md.	J. F. Warren	OBG	3,707	..	2	6	3	200
Beth Israel Hospital [1-3]	Boston	H. H. Rosenfield	OB	2,913	..	..	4	2	167
Boston City Hospital [1]	Boston	B. Tenney, Jr.	OBG	5,994	4	6	15	3	132
Boston Lying-in Hospital [1-3]—Free Hospital for Women [1-3]	Boston	D. E. Reid, G. V. Smith	OBG	11,274	20	12	28	3	125
Carney Hospital [3]—St. Margaret's Hospital [1-3]	Boston	R. J. Heffernan, D. J. McSweeney	OBG	6,156	2	6	16	3	175
Massachusetts Memorial Hospitals [1-3-190]	Boston	L. Parsons	OBG	1,590	5	..	4	3	175
New England Center Hospital [1-3]	Boston	G. F. Mitchell, Jr.	GYN	320	2	..	2	2	100
New England Hospital [1-3]	Boston	H. Rubin	OB	1,383	..	2	3	2	85
St. Elizabeth's Hospital [1-3]	Boston	W. J. McDonald	OBG	5,388	33	1	3	3	125
Cambridge City Hospital [1-3]	Cambridge, Mass.	P. P. McGovern	OBG	2,314	2	1	3	3	100
Wesson Maternity Hospital [1-3]	Springfield, Mass.	....	OB	.....	..	..	..	2	...
St. Joseph Mercy Hospital [1-3]	Ann Arbor, Mich.	W. Belser	OBG	3,097	1	2	4	3	310
University Hospital [1-3]	Ann Arbor, Mich.	N. F. Miller	OBG	4,345	7	3	12	3	100
Oakwood Hospital [1-3]	Dearborn, Mich.	M. S. Dennis	OBG	4,124	1	1	3	2	250
Crittenton General Hospital [1-3]	Detroit	H. B. Gaston	OBG	4,105	2	2	6	3	400
Detroit Memorial Hospital [1-3]	Detroit	H. F. Jarvis	OBG	2,332	1	1	4	3	425
Evangelical Deaconess Hospital [1-3]	Detroit	L. Braun	OBG	2,005	..	1	3	1	307
Grace Hospital [1-3]	Detroit	L. E. Bauer	OBG	9,101	2	4	12	3	275
Harper Hospital [1-3]	Detroit	H. C. Mack	OBG	4,700	4	3	7	3	275
Henry Ford Hospital [1-3]	Detroit	C. P. Hodgkinson	OBG	3,180	7	3	9	3	265
Mount Carmel Mercy Hospital [1-3]	Detroit	J. W. Pichette	OBG	9,010	1	2	10	3	275
Providence Hospital [1-3]	Detroit	H. Henderson	OBG	5,165	..	2	6	3	275
St. John Hospital [1-3]	Detroit	D. Morgan	OBG	6,083	..	2	4	2	325
St. Joseph Mercy Hospital [1-3]	Detroit	J. Clifford	OBG	2,633	..	1	2	3	410
Sinai Hospital [1-3]	Detroit	E. D. Rothman	OBG	3,486	18	2	5	3	300
Wayne University Affiliated Hospitals		....	OBG	.....	..	..	..	3	...
Herman Kiefer Hospital [1-3]	Detroit	C. S. Stevenson	.....	6,213	4	3	9	..	303
Receiving Hospital [1-3]	Detroit	C. S. Stevenson	OBG	1,651	6	2	6	..	303
Woman's Hospital [1-3]	Detroit	C. S. Shelton, H. M. Nelson	OBG	6,483	6	2	8	3	475
Hurley Hospital [1-3]	Flint, Mich.	J. I. Collins	OBG	4,850	6	2	6	3	325
Blodgett Memorial Hospital [1-3]	Grand Rapids, Mich.	A. B. Thompson	OBG	3,902	1	1	3	2	300
Butterworth Hospital [1-3]	Grand Rapids, Mich.	E. Y. Postma	OBG	5,321	1	2	6	3	300
St. Mary's Hospital [1-3]	Grand Rapids, Mich.	C. F. Webb	OBG	3,803	3	2	5	3	300
Highland Park General Hospital [1-3]	Highland Park, Mich.	R. S. Siddall	OBG	3,398	50	1	3	3	308
Borgess Hospital [1-3-40]	Kalamazoo, Mich.	E. F. Hersey	OBG	2,541	..	1	4	1	275
Pontiac General Hospital [1-3]	Pontiac, Mich.	H. A. Furlong	OBG	4,030	3	1	3	3	350
St. Joseph Mercy Hospital [1-3]	Pontiac, Mich.	R. Adair	OBG	5,475	1	2	6	3	375
William Beaumont Hospital [1-3]	Royal Oak, Mich.	H. W. Longyear	OBG	4,303	..	2	5	2	300
Saginaw General Hospital [1-3]	Saginaw, Mich.	C. E. Toshach	OBG	4,613	23	1	3	3	365
Minneapolis General Hospital [1-3]	Minneapolis	M. T. Mitchell	OBG	1,421	2	1	3	3	220
Northwestern Hospital [1-3]	Minneapolis	E. Ingalls	OBG	3,367	1	2	3	1	200
St. Barnabas Hospital [1-3]	Minneapolis	J. T. Moehn, M. T. Mitchell	OBG	3,360	1	1	2	1	235
St. Mary's Hospital [3]	Minneapolis	E. C. Maeder	OBG	6,553	1	3	6	2	250
Swedish Hospital [1-3]	Minneapolis	R. N. Frys	OBG	5,292	..	2	2	1	200
University of Minnesota Hospitals [1-3-233]	Minneapolis	J. L. McKelvey	OBG	2,050	8	2	8	3	220
Mayo Foundation [1]	Rochester, Minn.	A. B. Hunt	OBG	4,215	5	5	17	3	175
Ancker Hospital [1-3-25]	St. Paul	E. Kasper	OBG	1,019	..	..	1	1	220
Charles T. Miller Hospital [1-3]	St. Paul	P. T. Watson	OBG	3,240	2	..	1	1	325
St. Joseph's Hospital [1-3]	St. Paul	J. Melancon	OBG	3,671	..	..	1	3	250
University Hospital [1-3]	Jackson, Miss.	M. Newton	OBG	2,553	..	2	6	3	250
St. Louis County Hospital [3]	*Clayton, Mo.*	*E. L. Dorsett*	*OBG*	*1,013*	2	1	3	3	225
University of Missouri Medical Center [1-3]	Columbia, Mo.	J. S. Roden	OBG	865	6	2	6	3	200
Kansas City General Hospital [1-3]	Kansas City, Mo.	R. G. Helman	OBG	4,049	5	3	9	3	220
St. Joseph Hospital [1-3]	Kansas City, Mo.	G. L. Miller	OBG	3,536	3	1	2	1	250
St. Luke's Hospital [1-3]	Kansas City, Mo.	H. L. Gainey	OBG	4,091	4	2	4	3	310
Barnes Hospital [1-3]	St. Louis	W. Allen	OBG	6,515	7	10	21	3	50
De Paul Hospital [1-3]	St. Louis	E. G. Hamilton	OBG	4,259	1	1	2	2	200
Homer G. Phillips Hospital [1-3]	St. Louis	S. Monat	OBG	5,489	15	4	13	3	235

Numerical and other references will be found on pages 788 through 790.

11. OBSTETRICS AND GYNECOLOGY—Continued

Name of Hospital	Location	Chief of Service	Residencies Approved	Inpatients Treated	Autopsies	First Year Residencies Offered [9]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
Jewish Hospital [1-3]	St. Louis	D. Rothman	OBG	3,456	1	2	8	3	150
St. John's Hospital [1-3]	St. Louis	M. W. Weis	OBG	3,274	..	2	2	3	200
St. Louis City Hospital [1-3-213]	St. Louis	A. Esslinger, L. Hartnett	OBG	4,148	2	4	12	3	234
St. Luke's Hospital [1-3]	St. Louis	G. J. L. Wulff, Jr.	OBG	2,680	2	1	3	3	250
St. Mary's Group of Hospitals [1-3]	St. Louis	J. A. Hardy, Jr.	OBG	8,441	7	5	11	3	100
Lincoln General Hospital [1-3]	Lincoln, Neb.	R. E. Garlinghouse	OBG	1,072	1	1	1	1	350
St. Elizabeth Hospital [1-3]	Lincoln, Neb.	J. C. Clyne, S. T. Thierstein	OBG	3,359	..	2	4	3	350
Creighton University Medical Center		....	OBG	.....	..	..	..	3	...
Creighton Memorial—St. Joseph's Hospital [1-3]	Omaha, Neb.	M. E. Grier	OBG	1,001	5	4	12	..	210
St. Catherine's Hospital	Omaha, Neb.								
Immanuel Hospital [1-3]	Omaha, Neb.	W. E. Kroupa	OBG	1,914	..	1	1	1	175
University of Nebraska Hospital [1-3]	Omaha, Neb.	R. G. Holly	OBG	1,141	2	2	6	3	200
Cooper Hospital [1-3]	Camden, N. J.	G. B. German, H. P. Shipps	OBG	5,465	4	3	4	3	200
Hackensack Hospital [1-3]	Hackensack, N. J.	R. C. Schretzmann	OB	3,070	..	2	2	1	150
Jersey City Medical Center [1-3]	Jersey City, N. J.	E. N. Bookrajian	GYN	1,250	5	2	5	2	108
Margaret Hague Maternity Hospital [1-3]	Jersey City, N. J.	J. P. Donnelly	OB	11,927	140	13	21	2	133
Monmouth Medical Center [1-3]	Long Branch, N. J.	W. Shanik	OB	2,238	16	1	1	1	200
Burlington County Hospital [1-3]	Mount Holly, N. J.	R. H. Van Meter	OBG	2,780	1	..	3	3	100
Fitkin Memorial Hospital [1-3]	Neptune, N. J.	....	OBG	.....	...	..	..	2	...
Martland Medical Center [1-3]	Newark, N. J.	J. A. Gordon, I. Pannullo	OBG	3,896	5	2	6	3	160
Newark Beth Israel Hospital [1-3]	Newark, N. J.	A. Lowenstein	OBG	9,757	84	1	3	3	100
St. Michael's Hospital [1-3]	Newark, N. J.	G. W. Hayes, O. Glass	OBG	4,225	4	1	5	3	165
Passaic General Hospital [1-3-10]	Passaic, N. J.	W. M. Sullivan	OBG	4,682	2	2	2	1	250
Paterson General Hospital [1-3]	Paterson, N. J.	L. E. Thron, P. E. Rauschenbach	OB	2,686	..	1	1	1	150
Holy Name Hospital [1-3]	Teaneck, N. J.	J. A. Sullivan	OB	2,691	..	1	1	1	200
St. Francis Hospital [1-3]	Trenton, N. J.	J. R. Harman	OBG	3,782	6	1	2	2	210
Bernalillo County—Indian Hospital [1-3]	Albuquerque, N. Mex.	R. V. Seligman	OBG	1,394	..	1	3	3	350
Albany Hospital [1-3-259]	Albany, N. Y.	R. E. L. Nesbitt, Jr.	OBG	4,947	6	4	11	3	160
A. N. Brady Hospital [3-257]	Albany, N. Y.	J. G. Hayes	OB	3,278	..	3	3	2	160
Beth El Hospital [1-3]	Brooklyn, N. Y.	W. Levine	OBG	4,714	3	2	8	3	150
Brooklyn Hospital [1-3]	Brooklyn, N. Y.	A. T. Antony	OBG	2,811	1	1	3	3	175
Brooklyn Women's Hospital [1-3]	Brooklyn, N. Y.	J. Halperin	OBG	3,161	..	4	4	3	125
Coney Island Hospital [1-3]	Brooklyn, N. Y.	M. G. Der Brucke	OBG	1,915	1	2	6	3	145
Cumberland Hospital [1-3]	Brooklyn, N. Y.	C. H. Loughran	OBG	3,361	2	3	6	3	145
Greenpoint Hospital [1-3]	Brooklyn, N. Y.	S. Kaminester	OBG	2,312	1	2	6	3	145
Jewish Hospital [1-3]	Brooklyn, N. Y.	C. Birnberg	OBG	6,739	2	3	10	3	100
Kings County Hospital [1-3]	Brooklyn, N. Y.	L. M. Hellman	OBG	12,888	24	8	20	3	145
Long Island College Hospital [1-3]	Brooklyn, N. Y.	M. Glass	OBG	3,173	3	2	6	3	156
Lutheran Medical Center [1-3]	Brooklyn, N. Y.	A. S. MacGregor	OBG	2,653	1	1	3	3	135
Maimonides Hospital [1-3]	Brooklyn, N. Y.	E. Solomons	OBG	6,169	2	2	8	3	75
Methodist Hospital [1-3]	Brooklyn, N. Y.	S. C. Hall, H. S. Acken, Jr.	OBG	3,866	2	2	8	3	175
St. Catherine's Hospital [1-3]	Brooklyn, N. Y.	W. C. Meagher	OBG	2,582	2	2	5	3	125
St. John's Episcopal Hospital [1-3]	Brooklyn, N. Y.	C. W. Mueller	OBG	2,916	4	1	3	3	175
St. Mary's Hospital [1-3]	Brooklyn, N. Y.	A. A. Schenone	OBG	2,501	..	1	3	3	200
Unity Hospital [1-3]	Brooklyn, N. Y.	M. Berlind	OBG	2,244	2	2	4	2	150
Wyckoff Heights Hospital [1-3]	Brooklyn, N. Y.	F. Benschine	OBG	2,596	2	1	3	1	100
Allied Hospitals of the Sisters of Charity [1-3]	Buffalo	E. G. Winkler	OBG	6,372	4	2	8	3	235
Buffalo General Hospital [1-3]	Buffalo	C. L. Randall	OBG	4,257	2	2	9	3	175
Deaconess Hospital [1-3]	Buffalo	W. H. Burwig	OBG	3,416	2	1	3	3	300
Edward J. Meyer Memorial Hospital [1-3-272]	Buffalo	E. G. Winkler	OBG	2,298	9	2	7	3	247
Millard Fillmore Hospital [1-3]	Buffalo	L. F. McLean	OBG	6,819	2	2	6	3	285
Mary Imogene Bassett Hospital [1-3]	Cooperstown, N. Y.	O. J. Severud	OBG	551	1	..	1	3	200
City Hospital at Elmhurst [1-3]	Elmhurst, N. Y.	E. F. Smith	OBG	2,461	5	4	9	3	145
Flushing Hospital and Dispensary [1-3]	Flushing, N. Y.	E. C. Veprovsky	OBG	4,124	1	1	3	3	175
Meadowbrook Hospital [1-3]	Hempstead, N. Y.	G. T. Lilly	OBG	2,291	12	1	4	3	225
Jamaica Hospital [1-3]	Jamaica, N. Y.	M. P. Bates	OBG	3,559	2	1	3	2	200
Mary Immaculate Hospital [1-3]	Jamaica, N. Y.	J. V. Rizzi	OB	2,598	..	2	2	1	160
Queens Hospital Center [1-3]	Jamaica, N. Y.	E. C. Veprovsky	OBG	3,207	9	1	3	3	145
Charles S. Wilson Memorial Hospital [1-3]	Johnson City, N. Y.	S. F. Nagyfy	OBG	2,971	3	2	4	3	225
North Shore Hospital [1-3]	Manhasset, N. Y.	W. F. Finn	OBG	2,207	..	2	4	3	200
Nassau Hospital [1-3]	Mineola, N. Y.	J. A. Mellow	OBG	4,959	1	1	3	3	325
Mount Vernon	Vernon, N. Y.	N. M. Weinrod	OBG	2,556	1	1	3	3	200
Long Island Je	de Park, N. Y.	A. Rosenthal	OBG	2,954	1	1	3	3	75
Bellevue Hospital Center Div. III—New York University College of Medicine [1-3-291]	New York City	G. W. Douglas	OBG	4,341	18	9	23	3	145
Beth Israel Hospital [1-3]	New York City	G. Blinick	OBG	2,879	1	3	6	3	160
Bronx Hospital [1-3]	New York City	A. C. Posner, A. J. Fleischer	OBG	3,091	..	2	6	3	100
Bronx Municipal Hospital Center [1-3]	New York City	S. L. Romney	OBG	2,381	9	3	12	3	145
Fordham Hospital [1-3-206]	New York City	M. L. Brandt	OBG	1,875	2	2	6	3	145
Francis Delafield Hospital [1-3-4]	New York City	H. C. Taylor	GYN	296	22	1	4	1	145
French Hospital [1-3]	New York City	C. E. Heaton, H. C. Falk	OBG	1,971	..	2	4	3	110
Grand Central Hospital [1-3]	New York City	M. Speiser	OBG	355	1	1	2	2	135
Harlem Hospital [1-3]	New York City	A. C. Bosner, M. L Bobrow	OBG	5,839	5	2	6	3	145
Hospital for Joint Diseases [1-3]	New York City	E. L. Hecht	GYN	281	2	..	1	1	100
Jewish Memorial Hospital [1-3]	New York City	M. J. Goodfriend	OBG	2,358	2	1	1	1	175
Knickerbocker Hospital [1-3-4]	New York City	A. Decker	GYN	532	2	2	2	1	150
Lenox Hill Hospital [1-3]	New York City	J. Kilroe, M. Rodgers	OBG	2,979	2	1	3	3	180
Lincoln Hospital [1-3]	New York City	W. H. Godsick	OBG	5,404	3	5	9	3	145
Misericordia Hospital [1-3]	New York City	J. A. Kelly	OB	1,906	1	2	..	2	125
Morrisania City Hospital [1-3]	New York City	A. B. Tamis	OBG	1,993	4	1	4	3	145

Numerical and other references will be found on pages 788 through 790.

11. OBSTETRICS AND GYNECOLOGY—Continued

Name of Hospital	Location	Chief of Service	Residencies Approved	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Length of Approved Program (Years)	Beginning Stipend (Month)
Mount Sinai Hospital [1-3]	New York City	A. F. Guttmacher	OBG	7,387	5	12	18	3	75
New York Hospital [1-3]	New York City	R. R. G. Douglas	OBG	8,032	18	6	22	3	164
New York Infirmary [1-3]	New York City	I. Widenius, I Knowlton	OBG	2,464	3	3	7	3	150
New York Medical College—Metropolitan Medical Center Flower and Fifth Avenue Hospitals [1-3]	New York City	M. L. Stone	OBG	4,088	..	..	3	3	125
Metropolitan Hospital [1-3]	New York City	M. L. Stone	OBG	6,915	10	4	12	3	165
New York Polyclinic Medical School and Hospital [1-3]	New York City	E. H Dennen, H. H. Lardaro	OBG	2,202	3	2	6	3	125
New York University-Bellevue Medical Center University Hospital [1-3]	New York City	G Douglas	GYN	601	2	2	2	2	165
Presbyterian Hospital (Sloane Hospital for Women) [1]	New York City	H. C. Taylor	OBG	6,991	7	7	19	3	250
Roosevelt Hospital [3]	New York City	F R. Smith	GYN	1,014	4	..	2	2	208
St. Clare's Hospital [1-3-250]	New York City	M. J. Jordan	OBG	2,028	2	2	6	3	200
St. Francis Hospital [1-3]	New York City	J. S. Labate	OBG	3,119	2	1	3	3	125
St. Vincent's Hospital [1-3]	New York City	B. J. Pisani	OBG	4,589	9	2	9	3	125
Sydenham Hospital [1-3]	New York City	O. Glassman	OBG	2,000	1	1	3	3	165
Woman's Hospital [1-3]	New York City	....	OBG	....	..	..	..	3	...
United Hospital [1-3]	Port Chester, N. Y.	C. N. Jeffries	OB	1,871	..	1	1	1	...
Genesee Hospital [3]	Rochester, N. Y.	A. J. Tatelbaum	OBG	3,643	4	2	4	3	150
Highland Hospital [1-3]	Rochester, N. Y.	D H. Kariher	OBG	3,492	2	2	4	3	175
Rochester General Hospital [1-3]	Rochester, N. Y	J. C. Potter	OBG	3,991	2	1	3	3	150
St. Mary's Hospital [1-3]	Rochester, N. Y.	F Dobrzynski	OBG	4,221	2	1	3	3	225
Strong Memorial—Rochester Municipal Hospital [1-3]	Rochester, N. Y.	C. J. Lund	OBG	4,239	6	3	8	3	117
Ellis Hospital [1-3]	Schenectady, N. Y.	W. J. Jameson, Sr.	OBG	2,661	1	2	4	2	150
General Hospital [1-3]	Syracuse, N. Y.	M. Hatch	OBG	2,565	..	2	4	2	217
St. Joseph's Hospital [1-3]	Syracuse, N. Y.	L Fournier	OBG	4,959	1	1	1	1	233
State University of New York Upstate Medical Center [1-3]	Syracuse, N. Y.	E. C. Hughes, C. Clark	OBG	11,754	10	4	12	3	233
North Carolina Memorial Hospital [1-3-250]	Chapel Hill, N. C.	R. A. Ross	OBG	1,582	6	4	13	3	175
Charlotte Memorial Hospital [1]	Charlotte, N. C.	J. H. E. Woltz	OBG	3,765	2	1	2	2	225
Duke Hospital [1-3]	Durham, N. C.	B. Carter	OBG	2,870	5	5	18	3	102
Lincoln Hospital [1-3]	Durham, N. C.	L. R. Swift	OBG	1,005	..	2	2	1	175
Watts Hospital [1-3]	Durham, N. C.	R. L. Pearse	OBG	2,599	..	2	3	1	300
Rex Hospital [1]	Raleigh, N. C.	R. J. Ruark	OBG	3,783	1	1	2	2	350
St. Agnes Hospital [1-3]	Raleigh, N. C.	A. R. Summerlin	OBG	1,235	1	1	1	1	400
North Carolina Baptist Hospital [1-3]	Winston-Salem, N. C.	F. Lock	OBG	3,194	5	2	6	3	106
St. Luke's Hospital [3]	Fargo, N. Dak.	G. W. Hunter	OBG	1,870	1	2	2	3	300
Akron City Hospital [1-3]	Akron, Ohio	E. A. Riemenschneider	OBG	6,797	..	2	7	3	250
Akron General Hospital [1-3]	Akron, Ohio	N. E. Wentsler	OBG	5,670	2	2	6	3	250
St. Thomas Hospital [1-3]	Akron, Ohio	C. J. Paternite	OBG	3,482	6	3	6	3	250
Aultman Hospital [1-3]	Canton, Ohio	H. I. Keck	OBG	5,567	2	2	5	3	275
Mercy Hospital [1-3]	Canton, Ohio	N. Lewis	OBG	4,589	..	2	6	3	...
Bethesda Hospital [3]	Cincinnati	L F. Zacharias, E. E. Rhoads	OBG	5,225	5	2	5	3	200
Good Samaritan Hospital [1-3]	Cincinnati	....	OBG	.....	..	..	..	3	...
University of Cincinnati College of Medicine Hospital Group Cincinnati General Hospital [1-3]	Cincinnati	S. Garber, L. Bossert	OBG	5,784	5	3	12	3	100
Cleveland Clinic Hospital [1-3-320]	Cleveland	H. P. Taylor, J. S. Krieger	OBG	1,925	3	2	8	3	275
Cleveland Metropolitan General Hospital [1-3]	Cleveland	A. E. Bennett	OBG	4,457	7	4	13	3	150
Evangelical Deaconess Hospital [1-3]	Cleveland	J E. Morgan	OBG	3,143	..	1	3	3	175
Fairview Park Hospital [1-3]	Cleveland	E. D Richards	OBG	4,666	..	2	3	3	...
Huron Road Hospital [1-3]	Cleveland	S. E. Burkhart	OBG	3,701	6	2	6	3	210
Lutheran Hospital [1-3]	Cleveland	R. A Schroeder	OBG	2,056	2	2	3	2	250
Mount Sinai Hospital [1-3]	Cleveland	J. Gross	OBG	4,767	2	2	6	3	215
St. Ann Hospital [1-3]	Cleveland	A. H. Dindia	OBG	3,998	..	2	5	2	200
St. John's Hospital [1-3]	Cleveland	R P. Dreyer, G. R. Dickerhoof	OBG	3,138	1	2	5	3	225
St. Luke's Hospital [1-3]	Cleveland	G. B. Hurd	OBG	4,652	5	1	5	3	200
University Hospitals [1-3]	Cleveland	A. C. Barnes	OBG	7,141	47	3	12	3	125
Mount Carmel Hospital [1-3]	Columbus, Ohio	P. J. Reel, R. F. Daly	OBG	5,483	1	1	3	3	275
Ohio State University Hospitals *University Hospital* [1-3]	*Columbus, Ohio*	*J. C Ullery*	*OBG*	*6,646*	*10*	3	12	3	177
White Cross Hospital [1-3]-St. Ann's Hospital for Women [1-3]	Columbus, Ohio	R. M. Inglis, J. Gallen	OBG	8,671	1	2	8	3	200
Good Samaritan Hospital [1]	Dayton, Ohio	N. J. Thompson	OBG	6,578	..	1	3	3	255
Marymount Hospital [1-3]	Garfield Heights, Ohio	B. S. Malasky	OBG	1,910	2	2	2	1	200
Mercy Hospital [1-3]	Hamilton, Ohio	H. T. Atkins	OBG	3.233	5	2	4	2	200
Lima Memorial Hospital [1-3]	Lima, Ohio	M. A. Mulvania	OBG	2,579	..	1	2	2	275
St. Rita's Hospital [1-3]	Lima, Ohio	V. A. Noble	OBG	3,415	5	1	3	2	325
Maumee Valley Hospital [1-3]	Toledo, Ohio	J. F. Hillabrand	OB	642	..	1	1	1	...
Mercy Hospital [1-3]	Toledo, Ohio	R. C. King	OBG	3,802	1	1	3	3	275
St. Vincent's Hospital [1-3]	Toledo, Ohio	M. W. Diethelm	OBG	4,539	2	2	4	3	325
Toledo Hospital [1-3]	Toledo, Ohio	O. E. Todd	OBG	4,718	4	1	3	3	275
Trumbull Memorial Hospital [1-3]	Warren, Ohio	R. E. Meacham	OBG	4,403	1	1	3	2	300
St. Elizabeth Hospital [1-3]	Youngstown, Ohio	A. J. Brandt	OBG	3,960	1	2	5	3	325
St. Anthony Hospital	Oklahoma City	G. Rogers	OBG	5,580	8	1	3	3	300
University of Oklahoma Medical Center		M. J. Serwer, J. W. Kelso	....	.....	...	2	6	..	...
University Hospital [1-3-35]	Oklahoma City	....	OBG	3,064	3	..	..	3	200
Hillcrest Medical Center [1]	Tulsa, Okla.	R. Northrup	OBG	4,414	1	2	4	1	200
St. John's Hospital [1]	Tulsa, Okla.	M. B. Moore	OBG	6,687	1	1	3	3	175
Emanuel Hospital [1-3]	Portland, Ore.	G. H. Lage	OBG	7,263	16	2	6	3	275

Numerical and other references will be found on pages 788 through 790.

11. OBSTETRICS AND GYNECOLOGY—Continued

Name of Hospital	Location	Chief of Service	Residencies Approved	Inpatients Treated	Autopsies	First Year Residencies Offered [5]	Total Residencies Offered [5]	Length of Approved Program (Years)	Beginning Stipend (Month)
University of Oregon Medical School Hospitals and Clinics [1-3]	Portland, Ore.	R. C. Benson	OBG	2,327	3	2	4	3	125
Abington Memorial Hospital [1-3]	Abington, Pa.	R. D. Porter, C. M. Turman	OBG	4,352	6	1	3	3	150
Allentown Hospital [1-3]	Allentown, Pa.	F. C. Schaeffer	OBG	4,312	..	1	3	3	225
Sacred Heart Hospital [1-3]	Allentown, Pa.	....	OBG	....	..	..	.	3	...
Altoona Hospital [1-3]	Altoona, Pa.	E. F. Williams	OBG	2,517	..	..	..	1	325
St. Luke's Hospital [1-3]	Bethlehem, Pa.	F. J. Pearson, F. E. Schramm	OBG	3,101	3	2	2	2	225
Geo. F. Geisinger Memorial Hospital [1-3]	Danville, Pa.	R. E. Nicodemus	OBG	1,410	2	1	3	3	175
Thomas M. Fitzgerald Mercy Hospital	Darby, Pa.	J. V. Missett, Jr.	OBG	5,877	1	2	6	3	250
Harrisburg Hospital [1-3]	Harrisburg, Pa.	W. P. Dailey	OBG	5,618	31	2	4	3	250
Albert Einstein Medical Center									
Northern Division [1-3]	Philadelphia	G. Weinstein	OBG	4,618	5	1	4	3	125
Southern Division [1-3]	Philadelphia	A. First	OBG	2,303	2	1	3	3	125
Chestnut Hill Hospital [1]	Philadelphia	Z. B. Newton	OBG	2,381	1	1	2	2	350
Episcopal Hospital [1-3]	Philadelphia	J. H. Dugger	OBG	2,865	1	1	3	3	150
Frankford Hospital [1-3]	Philadelphia	G. C. Hanna, Jr.	OBG	3,272	3	1	3	3	250
Germantown Dispensary and Hospital [1-3]	Philadelphia	Z. B. Newton	OBG	2,761	.	2	2	3	175
Graduate Hospital of the University of Pennsylvania [1-3]	Philadelphia	S. L. Israel	GYN	592	..	1	2	2	100
Hahnemann Medical College and Hospital [1-3]	Philadelphia	N. F. Paxson	OBG	2,696	19	3	9	3	75
Hospital of the University of Pennsylvania [1-3]	Philadelphia	F. L. Payne	OBG	5,506		4	16	3	125
Hospital of the Woman's Medical College of Pennsylvania [1-3]	Philadelphia	M. D. Pettit	OBG	2,617		2	6	3	110
Jefferson Medical College Hospital [1-3]	Philadelphia	T. L. Montgomery, J. B. Montgomery	OBG	5,760		2	13	3	100
Lankenau Hospital [1-3]	Philadelphia	R. B. Wilson	OBG	2,653	..	1	3	3	200
Mercy-Douglass Hospital [1-3]	Philadelphia	H. O. Dickens	OBG	1,292	..	2	4	1	200
Methodist Episcopal Hospital [1-3]	Philadelphia	G. A. Hahn	OBG	1,723	3	1	3	3	150
Misericordia Hospital [1-3]	Philadelphia	J. E. Lynch	OBG	3,401	..	1	4	3	250
Pennsylvania Hospital [1-3]	Philadelphia	R. A. Kimbrough	OBG	6,212	6	3	9	3	20
Philadelphia General Hospital [1-3]	Philadelphia	C. Muckle	OBG	7,953	19	3	9	3	121
Presbyterian Hospital [1-3-357]	Philadelphia	J. D. Corbit, Jr.	OBG	3,261	3	1	3	3	175
St. Mary's Hospital [3]	Philadelphia	M. A. Castallo	OBG	1,976	..	2	4	2	300
Temple University Hospital [1-3]	Philadelphia	J. R. Willson	OBG	5,645	6	5	15	3	...
Woman's Hospital [1-3]	Philadelphia	A. G. Taylor, H. M. Angelucci	OBG	1,929	3	5	5	3	175
Health Center Hospitals of the University of Pittsburgh School of Medicine		....	.....	.....	..	..	..	..	...
Elizabeth Steel Magee Hospital [1]	Pittsburgh	J. R. Bisaman, J. A. Hepp	OBG	11,064	11	4	12	3	125
Mercy Hospital [1-3]	Pittsburgh	R. A. Gillis, G. J. Carlin	OBG	3,508	5	1	3	3	235
Montefiore Hospital [1-3]	Pittsburgh	W. J. Finegold	OB	1,723	..	2	2	1	225
Pittsburgh Hospital [1-3]	Pittsburgh	E. A. Conti	OBG	2,504	2	1	2	2	200
St. Francis General Hospital and Rehabilitation Institute [1-3]	Pittsburgh	J. H. Carroll, J. A. Hepp	OBG	3,588	2	2	4	3	240
St. Margaret Memorial Hospital [1-3]	Pittsburgh	O. J. Eichhorn, R. E. Tafel	OBG	1,397	3	1	2	2	300
South Side Hospital [1-3]	Pittsburgh	J. New, H. Thomas	OBG	2,555	28	1	3	2	350
Western Pennsylvania Hospital [1-3]	Pittsburgh	A. C. Williamson	OB	2,150	1	1	1	1	225
Reading Hospital [1-3]	Reading, Pa.	F. B. Nugent	OBG	1,888	4	1	3	3	...
Bayamon Charity District Hospital [1-3]	Bayamon, P. R.	E. Arandes	OBG	2,804	5	2	6	3	250
Ponce District General Hospital [3]	Ponce, P. R.	A. Tamm	OBG	1,968	7	3	3	1	250
San Juan City Hospital [1-3]	San Juan, P. R.	R. A. Gil	OBG	5,992	3	3	9	3	175
Providence Lying-In Hospital	Providence, R. I.	W. S. Jones	OB	9,774	40	2	2	1	150
Rhode Island Hospital [1-3]	Providence, R. I.	H. C. McDuff, Jr.	GYN	1,147	3	2	4	2	150
Teaching Hospitals of the Medical College of South Carolina [1]	Charleston, S. C.	L. L. Hester, Jr.	OBG	5,131	2	3	7	3	137
Medical College Hospital		....	.....	....	..	..	..	..	...
Roper Hospital		....	.....	....	..	..	..	..	...
Columbia Hospital of Richland County [1]	Columbia, S. C.	H. H. Fouche	OBG	4,221	3	1	3	3	175
McLeod Infirmary [1]	Florence, S. C.	R. F. Zeigler	OBG	....	..	1	1	1	250
Greenville General Hospital [1-3]	Greenville, S. C.	W. Hearin	OBG	5,995	1	2	4	3	275
Sacred Heart Hospital [1-3]	Yankton, S. D.	....	OBG	....	..	..	..	3	...
Baroness Erlanger Hospital [1-3]	Chattanooga, Tenn.	R. G. Demos	OBG	5,539	5	3	7	3	325
Memorial Hospital [1-3]	Chattanooga, Tenn.	H. E. Jones	OBG	2,816	2	2	2	1	300
University of Tennessee Memorial Research Center and Hospital [1]	Knoxville, Tenn.	A. W. Diddle	OBG	1,770	..	1	3	3	320
Baptist Memorial Hospital [1-3]	Memphis, Tenn.	B. E. Everett	OBG	6,242	2	1	3	3	325
City of Memphis Hospitals [1-3]	Memphis, Tenn.	P. C. Schreier	OBG	9,602	8	5	15	3	150
St. Joseph Hospital [1-3]	Memphis, Tenn.	H. Feinstein	OBG	3,784	4	1	3	3	325
Baptist Hospital [1-3]	Nashville, Tenn.	S. Cowan, Jr.	OBG	5,045	1	2	5	3	300
George W. Hubbard Hospital [1-3]	Nashville, Tenn.	W. F. B. James	OB	1,448	1	2	5	2	150
Nashville General Hospital [1-3]	Nashville, Tenn.	R. Chalfant	OBG	1,945	3	2	5	3	325
St. Thomas Hospital [1-3-369]	Nashville, Tenn.	R. W. Parker	OBG	2,880	..	2	4	2	300
Vanderbilt University Hospital [1-3]	Nashville, Tenn.	F. E. Whitacre	OBG	2,491	3	3	12	3	50
Brackenridge Hospital [1-3]	Austin, Texas	M. Turner	OBG	2,412	1	..	1	1	300
Baylor University Hospital [3]	Dallas, Texas	W. K. Strother, Jr.	OBG	10,710	3	3	7	3	180
Methodist Hospital [1-3-374]	Dallas, Texas	S. W. Cobb	OBG	5,880	2	2	4	3	200
Parkland Memorial Hospital [1-3]	Dallas, Texas	J. Pritchard	OBG	7,338	5	6	14	3	150
St. Paul's Hospital [1-3]	Dallas, Texas	O. V. Prejean	OBG	6,545	1	2	5	3	150
Hotel Dieu-Sisters Hospital [3]	El Paso, Texas	K. S. Kurita	OBG	1,958	1	1	2	1	150
Harris Hospital [1]	Fort Worth, Texas	A. Watson	OBG	7,811	1	1	2	1	300
University of Texas Medical Branch Hospitals [1-3]	Galveston, Texas	G. Jarvis	OBG	2,674	1	3	9	3	160
Baylor University College of Medicine Affiliated Hospitals		....	.....	.....	..	..	..	3	...
Jefferson Davis Hospital	Houston, Texas	S. H. Wills	OBG	5.448	8	4	8	..	83
Methodist Hospital [1-3]	Houston, Texas	H. P. Arnold, J. A. Wall	OBG	4,041	3	..	4	..	220
Hermann Hospital [1-3]	Houston, Texas	T. G. Gready, Jr., A. M. Faris	OBG	9,325	4	2	6	3	125
St. Joseph's Hospital [3-376]	Houston, Texas	J. P. Salerno	OBG	7,193	..	1	5	3	220

Numerical and other references will be found on pages 788 through 790.

11. OBSTETRICS AND GYNECOLOGY—Continued

Name of Hospital	Location	Chief of Service	Residencies Approved	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
St. Luke's Episcopal Hospital [1-3-40]	Houston, Texas	H. L. Gardner	OBG	4,363	1	3	3	1	100
University of Texas M. D. Anderson Hospital and Tumor Institute [1-3-4]	Houston, Texas	F. Rutledge	GYN	1,068	17	..	4	1	300
Baptist Memorial Hospital [1-3]	San Antonio, Texas	P. T. Williams	OBG	6,580	4	2	3	2	150
Robert B. Green Memorial Hospital [1-3]	San Antonio, Texas	G. G. Passmore	OBG	4,978	10	2	6	3	170
Thomas D. Dee Memorial Hospital [1]	Ogden, Utah	V. L. Ward	OBG	3,323	..	1	3	3	300
Dr. W. H. Groves Latter-Day Saints Hospital [1-3]	Salt Lake City	A. K. Smith	OBG	8,336	3	3	6	3	275
Holy Cross Hospital [1-3]	Salt Lake City	M. S. Coombs	OBG	3,024	4	2	3	3	275
Salt Lake County General Hospital [1-3-381]	Salt Lake City	J. G. Haskell	OBG	994	..	4	12	3	275
University of Vermont Affiliated Hospitals		....	OBG	.....	..	..	..	3	...
De Goesbriand Memorial Hospital [1-3]	Burlington, Vt.	W. Slavin	.....	1,713	1	1	3	..	250
Mary Fletcher Hospital [1-3-195]	Burlington, Vt.	J. V. S. Maeck	.....	1,986	..	1	3	..	200
Alexandria Hospital [1-3]	Alexandria, Va.	H. Picot	OBG	4,979	1	3	3	2	275
Arlington Hospital [1-3]	Arlington, Va.	J. B. Jacobs	OBG	3,412	1	1	1	1	240
University of Virginia Hospital [1-3]	Charlottesville, Va.	W. N. Thornton, Jr.	OBG	3,553	..	2	8	3	75
Riverside Hospital [1-3]	Newport News, Va.	J. Q. Hatten	OBG	3,338	..	1	3	3	250
De Paul Hospital [1-3]	Norfolk, Va.	J. R. Kight	OBG	5,598	1	2	4	3	200
Norfolk General Hospital [1-3]	Norfolk, Va.	B. D. Jones	OBG	4,578	4	2	4	3	215
Johnston-Willis Hospital [1-3]	Richmond, Va.	E. Rucker	OBG	1,561	1	1	1	1	250
Medical College of Virginia-Hospital Division [1-3]	Richmond, Va.	R H. Hoge, H. H. Ware, Jr.	OBG	8,883	4	4	12	3	75
University of Washington Affiliated Hospitals									
King County Hospital Unit No. 1 (Harborview) [1-3]	Seattle	R. R. De Alvarez	OBG	1,683	5	4	16	3	150
University Hospital	Seattle	R. R. De Alvarez	OBG	.....	..	..	..	..	...
Providence Hospital [1-3]	Seattle	J. W. Codling	OB	3,036	..	1	1	1	300
Swedish Hospital [1-3]	Seattle	H. J. Schroeder	OBG	4,898	1	2	3	1	225
Sacred Heart Hospital [1-3]	Spokane, Wash.	J. J. Black	OBG	5,477	3	1	3	3	250
St. Luke's Hospital [1-3]	Spokane, Wash.	J. A. Moyer	OBG	1,741	..	1	1	1	250
Memorial Hospital [1-3]	Charleston, W. Va	J. L. Crites	OBG	2,614	..	2	2	1	250
St. Mary's Hospital [1-3-391]	Madison, Wis.	G. C. Hank	OBG	3,699	..	1	1	1	250
University Hospitals [1-3-388]	Madison, Wis.	B. Peckham	OBG	971	6	2	8	3	100
Madison General Hospital [1-3]	Madison, Wis.	....		.....	...	..	..	..	...
Columbia Hospital [1-3]	Milwaukee	L. T. Servis	OB	1,721	..	2	2	1	270
Milwaukee County Hospital [1-3-400]	Milwaukee	B. E. Urdan	OBG	2,416	6	2	6	3	216
Milwaukee Hospital [1-3-395]	Milwaukee	F. J. Hofmeister	OBG	4,456	26	2	4	3	270
Mount Sinai Hospital [1-3]	Milwaukee	B. E. Urdan	OBG	4,114	2	1	2	2	...
St. Joseph's Hospital [1]	Milwaukee	J. Klieger	OBG	7,355	..	2	6	3	300
St. Luke's Hospital [1-3]	Milwaukee	J. Korducki	OBG	2,366	2	3	3	1	325
St. Mary's Hospital [1-3-393]	Milwaukee	J. D. Owen	OBG	3,061	2	1	3	2	300

12. OCCUPATIONAL MEDICINE

The programs in Occupational Medicine which have been approved by the Council and the American Board of Preventive Medicine through the Residency Review Committee for Preventive Medicine, will be found listed under Preventive Medicine, 760

13. OPHTHALMOLOGY

Residency programs in the following hospitals have been approved by the Council and the American Board of Ophthalmology through the Residency Review Committee for Ophthalmology, as offering acceptable training in the specialty.

Hospitals, 168; Residencies, 762

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES AIR FORCE								
U. S. Air Force Hospital	San Antonio, Texas	....	...	.....	..	..	3	...
UNITED STATES ARMY								
Letterman Army Hospital [1-3]	San Francisco	R. R. Kelley	347	15,387	1	3	3	...
Fitzsimons Army Hospital [1-3]	Denver	J. E. Edwards	289	17,077	1	3	3	...
Army Medical Center [1-3]	Washington, D. C.	A. Lowrey, Jr.	1,276	50,577	3	9	3	...
Brooke Army Hospital [1-3]	San Antonio, Texas	W. L. Spaulding	544	15,504	2	6	3	...
UNITED STATES NAVY								
U. S. Naval Hospital [1-3]	Oakland, Calif.	W. L. Erdbrink	339	7,398	1	1	3	...
U. S. Naval Hospital [1]	San Diego, Calif.	R. P. Nadbath	480	25,317	2	6	3	...
U. S. Naval Hospital [1-3]	Bethesda, Md.	S. J. Ryan	224	5,497	1	3	3	...
U. S. Naval Hospital [1]	St. Albans, N. Y.	D. A. Mills	206	5,824	1	3	3	...
U. S. Naval Hospital [1]	Philadelphia	J. I. Thorn	302	7,251	1	3	3	...
UNITED STATES PUBLIC HEALTH SERVICE								
U. S. Public Health Service Hospital [1-3]	San Francisco	W. W. Richards	120	.....	1	2	3	...
U. S. Public Health Service Hospital [1-3]	New Orleans	W. E. Hoyle	175	4,556	1	3	3	...
U. S. Public Health Service Hospital [1]	Baltimore	W. P. Griffey	128	4,334	..	3	3	...
National Institutes of Health-Clinical Center	Bethesda, Md.	....	...	.....	..	..	2	...
U. S. Public Health Service Hospital [1-3]	Stapleton, S. I., N. Y.	J. B. Peebles	252	8,205	1	3	3	...

Numerical and other references will be found on pages 788 through 790.

13. OPHTHALMOLOGY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered ^{5}	Total Residencies Offered ^{5}	Length of Approved Program (Years)	Beginning Stipend (Month)
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE								
Freedmen's Hospital $^{1-3}$	Washington, D. C.	C. L. Cowan	87	2,850	1	2	3	308
OTHER FEDERAL								
Gorgas Hospital ^{1}	Ancon, C. Z.	R. H. Rupp	176	6,013	1	2	3	390
NONFEDERAL AND VETERANS ADMINISTRATION								
University of Alabama Medical Center								
University Hospital and Hillman Clinic $^{1-3}$	Birmingham, Ala.	S. J. Kelly, C. P. Grant	712	5,013	2	6	..	143
Veterans Admin. Hospital $^{1-3}$	Birmingham, Ala.	R. B. Burroughs	85	295	1	1	..	271
Veterans Admin. Hospital $^{1-3}$	Tuskegee, Ala.	A. L. Brewer	100	538	1	3	3	271
Arkansas Baptist Hospital ^{1}	Little Rock, Ark.	R. Cook	670	.....	1	3	3	325
University of Arkansas Medical Center and Affiliated Hospitals	Little Rock, Ark.		...	.....	..	..	3	...
University Hospital	Little Rock, Ark.		...	.....	..	..	..	...
Veterans Admin. Hospital	Little Rock, Ark.		...	.....	..	..	..	...
General Hospital of Fresno County $^{1-3}$	Fresno, Calif.	D. H. Trowbridge	199	6,566	1	2	2	300
Veterans Admin. Hospital $^{1-3-88}$	Long Beach, Calif.	G. M. Struble	463	2,252	1	3	3	271
Los Angeles County Hospital ^{1}	Los Angeles	W. J. Endres	877	29,249	2	6	3	259
Los Angeles Eye and Ear Hospital $^{1-3-88}$	Los Angeles	O. H. Ellis	...	4,832	3	3	2	...
University of California Hospital $^{1-3}$	Los Angeles	S. R. Irvine	348	12,481	2	6	3	229
Veterans Admin. Hospital $^{1-3}$	Los Angeles	C. S. Mumma	390	11,939	..	2	3	270
White Memorial Hospital $^{1-3}$	Los Angeles	G. K. Kambara	282	9,137	2	3	3	215
Highland-Alameda County Hospital $^{1-3}$	Oakland, Calif.	M. Gump	355	8,758	1	2	3	200
University of California Hospitals $^{1-106}$	San Francisco	F. C. Cordes	495	12,013	4	12	3	231
Veterans Admin. Hospital $^{1-3}$	San Francisco	M. Fine, D. O. Harrington	231	380	1	3	3	271
Harbor General Hospital ^{1}	Torrance, Calif.	R. H. Kelson	142	6,032	1	3	2	259
University of Colorado Medical Center			...	.....	..	..	3	...
Colorado General Hospital $^{1-3}$	Denver	J. C. Long	169	13,658	2	6	..	180
Denver General Hospital $^{1-3}$	Denver	G. A. Filmer	103	444	..	..	..	179
Yale-New Haven Medical Center								
Grace-New Haven Community Hospital $^{1-3}$	New Haven, Conn.	R. M. Fasanella	612	7,573	1	3	3	50
District of Columbia General Hospital $^{1-3}$	Washington, D. C.	E. Cummings, R. Cox	140	4,784	1	3	1	233
Georgetown University Medical Center			...	.....	..	..	3	...
Georgetown University Hospital $^{1-3-129}$	Washington, D. C.	E. J. Cummings	428	1,148	4	8	..	175
Veterans Admin. Hospital $^{1-3}$	Washington, D. C.	J. G. Lee	...	.....	..	1	..	270
Washington Hospital Center $^{1-3}$	Washington, D. C.	J. S. Dryden	355	6,062	3	9	3	215
Jackson Memorial Hospital $^{1-3}$	Miami, Fla.	E. W. D. Norton	794	8,764	3	9	3	200
Grady Memorial Hospital ^{1}	Atlanta, Ga.	F. P. Calhoun, Jr.	588	20,159	2	6	3	100
Medical College of Georgia Hospitals			...	.....	..	..	8	...
Eugene Talmadge Memorial Hospital $^{1-3}$	Augusta, Ga.	J. Fair	148	1,512	1	2	..	250
Chicago Eye, Ear, Nose and Throat College and Hospital $^{1-3}$	Chicago	O. B. Nugent	353	10,658	2	4	2	100
Cook County Hospital $^{1-3}$	Chicago	T. Zekman	580	19,035	3	6	2	140
Michael Reese Hospital $^{1-3}$	Chicago	T. M. Shapira	974	5,209	2	4	2	125
Northwestern University Medical Center			...	.....	..	..	3	...
Chicago Wesley Memorial Hospital $^{1-3}$	Chicago		355	.....	1	2	..	125
Passavant Memorial Hospital $^{1-3}$	Chicago		463	261	2	4	..	125
Veterans Admin. Research Hospital $^{1-3}$	Chicago	D. T. Vail	150	1	1	2	..	271
Presbyterian-St. Luke's Hospital $^{1-3-411}$	Chicago	W. F. Hughes	315	.....	1	3	2	125
University of Chicago Clinics $^{1-3}$	Chicago	F. W. Newell	376	9,684	1	4	3	200
University of Illinois Hospitals		P. C. Kronfeld	...	.....	..	..	3	...
Illinois Eye and Ear Infirmary $^{1-3}$	Chicago		1,340	64,179	7	22	..	145
Research and Educational Hospitals $^{1-3}$	Chicago		310	9,696	2	3	..	145
Evanston Hospital $^{1-3}$	Evanston, Ill.	G. R. Soper	244	.....	1	1	2	225
Veterans Admin. Hospital $^{1-3-149}$	Hines, Ill.	W. A. Mann	304	.....	1	3	2	270
Indiana University Medical Center and Affiliated Hospitals			...	.....	..	..	3	...
Marion County General Hospital $^{1-3}$	Indianapolis		190	9,260	1	3	..	210
Indiana University Medical Center Hospital ^{1}	Indianapolis		355	.....	4	12	..	225
State University of Iowa Hospitals $^{1-3}$	Iowa City	A. E. Braley	1,572	17,834	5	17	3	175
University of Kansas Medical Center $^{1-3}$	Kansas City, Kan.	A. Lemoine, Jr.	619	4,653	1	3	3	125
University of Louisville Medical Center		C. D. Townes	...	.....	..	..	3	...
Louisville General Hospital $^{1-3}$	Louisville, Ky.		152	7,131	1	4	..	83
Veterans Admin. Hospital $^{1-3}$	Louisville, Ky.		150	1,589	1	3	..	270
Charity Hospital of Louisiana								
Louisiana State University Unit ^{1}	New Orleans	G. M. Haik	472	7,312	2	4	3	100
Tulane University Unit ^{1}	New Orleans	J. H. Allen	502	6,259	..	4	3	100
Eye, Ear, Nose and Throat Hospital ^{3}	New Orleans	H. B. Dozier	1,400	17,692	..	10	3	125
Ochsner Foundation Hospital $^{1-3}$	New Orleans	R. A. Schimek	714	.....	1	3	3	225
Veterans Admin. Hospital $^{1-3}$	New Orleans	J. H. Allen	137	.....	1	3	3	271
Confederate Memorial Medical Center ^{1}	Shreveport, La.		...	.....	..	..	3	...
Baltimore Eye, Ear and Throat Hospital $^{1-3}$	Baltimore	J. E. Brumbach, Jr.	906	13,210	1	3	3	150
Johns Hopkins Hospital $^{1-3}$	Baltimore	A. E. Maumenee	2,282	15,114	4	14	3	217
Veterans Admin. Hospital $^{1-3-182}$	Fort Howard, Md.	A. E. Maumenee	66	600	..	1	3	271
Boston City Hospital ^{1}	Boston	D. R. Alpert	475	18,830	..	8	3	152
Massachusette Eye and Ear Infirmary $^{1-3}$	Boston	E. B. Dunphy	8,677	69,327	..	12	3	200
Massachusetts Memorial Hospitals $^{1-3}$	Boston	T. Gundersen	269	2,773	1	3	2	175
University Hospital $^{1-3-215}$	Ann Arbor, Mich.	F. B. Fralick	882	14,253	6	19	3	160
Harper Hospital $^{1-3}$	Detroit	A. D. Ruedemann	1,281	5,007	2	6	3	275
Henry Ford Hospital $^{1-3}$	Detroit	J. S. Guyton	707	22,722	5	16	3	265
Wayne University Affiliated Hospitals			...	.....	..	..	3	...
Veterans Admin. Hospital $^{1-3}$	Dearborn, Mich.	A. D. Ruedemann	248	7	..	1	..	270
Receiving Hospital $^{1-3}$	Detroit	A. D. Ruedemann, Sr.	857	22,486	5	15	..	303
Minneapolis General Hospital $^{1-3}$	Minneapolis	K. E. Sandt	148	3,408	1	2	3	220
University of Minnesota Hospitals $^{1-3}$	Minneapolis	J. E. Harris	164	6,126	1	3	3	220
Veterans Admin. Hospital $^{1-3-230}$	Minneapolis	J. P. Wendland	206	.....	2	3	3	271
Mayo Foundation ^{1}	Rochester, Minn.	C. W. Rucker	767	39,000	5	15	3	175
Ancker Hospital $^{1-3}$	St. Paul	H. Plotke	107	4,620	..	1	3	220

Numerical and other references will be found on pages 788 through 790.

13. OPHTHALMOLOGY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered *	Total Residencies Offered *	Length of Approved Program (Years)	Beginning Stipend (Month)
Charles T. Miller Hospital $^{1-3}$	St. Paul	H. Grant	768	1,139	1	2	3	325
University of Mississippi Medical Center		...	...	.....	..	..	3	...
University Hospital $^{1-3}$	Jackson, Miss.	S. B. Johnson	92	1,000	..	1	..	225
Veterans Admin. Hospital $^{1-3}$	Jackson, Miss.	L. Mayer	113	.....	..	..	..	271
Kansas City General Hospital $^{1-3}$	Kansas City, Mo.	S. A. Kantor	254	5,058	1	3	3	250
Barnes Hospital $^{1-3}$	St Louis	B. Becker	2,027	22,459	8	19	3	150
Homer G. Phillips Hospital $^{1-3}$	St. Louis	H. P. Venable	166	.....	3	6	3	225
St. Louis City Hospital $^{1-3}$	St. Louis	D. Bisno	152	6,410	1	3	3	234
St. Mary's Group of Hospitals $^{1-3}$	St. Louis	R. D. Mattis	284	6,954	1	3	3	100
Veterans Admin. Hospital $^{1-3}$	St. Louis	H. Rosenbaum	233	1,935	1	3	3	271
University of Nebraska Hospital $^{1-3}$	Omaha, Neb.	J. H. Judd	109	3,267	1	3	3	200
Jersey City Medical Center $^{1-3}$	Jersey City, N. J.	F. X. Brophy	351	.....	1	3	3	165
United Hospitals of Newark								
Newark Eye and Ear Infirmary Unit ^{3}	Newark, N. J.	W. H. Hahn	1,436	7,796	..	2	3	125
Brooklyn Eye and Ear Hospital $^{1-3}$	Brooklyn, N. Y	M. J. Buonaguro	3,025	39,433	4	8	2	100
Jewish Hospital $^{1-3}$	Brooklyn, N. Y.	M. Lasky	249	4,254	1	3	3	100
Kings County Hospital $^{1-3-203}$	Brooklyn, N. Y.	R. Troutman	485	17,385	2	6	3	145
Veterans Admin. Hospital $^{1-3}$	Brooklyn, N. Y.	M. A. Lasky	143	780	1	2	2	270
Buffalo General Hospital $^{1-3}$	Buffalo	I. J. Koenig	390	1,262	1	1	2	175
Edward J. Meyer Memorial Hospital $^{1-3-207}$	Buffalo	W. Y. Jones	720	11,738	2	5	3	247
City Hospital at Elmhurst $^{1-3}$	Elmhurst, N. Y.	I. D. Spivack	77	3,571	2	3	2	145
Queens Hospital Center $^{1-3}$	Jamaica, N. Y.	T. D. Angelo	173	3,578	1	2	2	145
Bellevue Hospital Center								
Div. IV—New York University								
Post-Graduate Medical School $^{1-3-306}$	New York City	A. G. De Voe	1,049	25,511	4	12	3	145
Bronx Municipal Hospital Center $^{1-3}$	New York City	M. Chamlin	132	7,701	2	6	3	145
Harlem Eye and Ear Hospital $^{1-3}$	New York City	P. Muller	611	15,585	1	3	2	100
Lenox Hill Hospital $^{1-3}$	New York City	B. Payne	367	4,075	1	2	3	180
Manhattan Eye, Ear and Throat Hospital $^{1-3}$	New York City	R. T. Paton	3,095	53,044	6	12	2	100
Montefiore Hospital $^{1-3}$	New York City	S. Gartner	239	1,300	1	3	3	157
Mount Sinai Hospital $^{1-3}$	New York City	J. Laval	449	9,122	1	3	3	75
New York Eye and Ear Infirmary $^{1-3}$	New York City	B. F. Payne	3,750	61,438	6	18	3	50
New York Hospital $^{1-3}$	New York City	J. McLean	946	12,015	2	6	3	164
New York Polyclinic Medical School and Hospital $^{1-3}$	New York City	S. Schutz	178	5,920	1	3	2	125
New York University—Metropolitan Medical Center								
Metropolitan Hospital $^{1-3}$	New York City	B. Friedman	130	12,595	1	2	2	145
Presbyterian Hospital (Institute of Ophthalmology) ^{1}	New York City	J. H. Dunnington	3,009	27,786	3	9	3	250
St. Luke's Hospital $^{1-3}$	New York City	H. Eggers	162	4,923	1	2	2	100
St. Vincent's Hospital $^{1-3}$	New York City	R. Castroviejo	475	1	1	3	3	125
Veterans Admin. Hospital (Bronx) $^{1-3}$	New York City	A. Haft	301	.....	1	3	3	271
St. Mary's Hospital $^{1-3}$	Rochester, N. Y.	C. T. Sullivan	347	623	1	1	2	225
Strong Memorial—Rochester Municipal Hospital $^{1-3}$	Rochester, N. Y.	J. F. Gipner	445	.....	1	3	3	117
State University of New York Upstate Medical Center $^{1-3}$	Syracuse, N. Y.	J. McGraw	...	3,979	1	3	3	233
North Carolina Memorial Hospital $^{1-3}$	Chapel Hill, N. C.	S. D. McPherson	125	3,865	1	3	3	175
Duke University Affiliated Hospitals		...	...	.....	..	..	3	...
Duke Hospital $^{1-3}$	Durham, N. C.	W. B. Anderson	648	7,758	2	8	..	127
Veterans Admin. Hospital $^{1-3}$	Durham, N. C.	W. B. Anderson	192	.....	..	2	..	270
McPherson Hospital $^{1-3}$	Durham, N. C.	S. D. McPherson, Jr.	834	24,365	1	3	3	200
North Carolina Baptist Hospital $^{1-3}$	Winston-Salem, N. C.	W. Roberts	293	4,150	1	3	3	166
University of Cincinnati College of Medicine Hospital Group								
Cincinnati General Hospital $^{1-3-325}$	Cincinnati	D. Lyle	301	8,788	2	7	3	125
Cleveland Clinic Hospital $^{1-3-333}$	Cleveland	R. J. Kennedy	418	20,693	2	6	3	250
Cleveland Metropolitan General Hospital $^{1-3-332}$	Cleveland	R. J. Nicholl	115	4,900	1	4	3	150
University Hospitals $^{1-3}$	Cleveland	L. V. Johnson	803	6,887	2	6	3	125
Veterans Admin. Hospital $^{1-3-319}$	Cleveland	W. P. Chamberlain	260	.....	1	3	3	271
Ohio State University Hospitals								
University Hospital $^{1-3}$	Columbus, Ohio	W. H. Havener	479	.....	4	12	3	177
University of Oklahoma Medical Center		J. R. Reed	...	.....	1	2	2	...
University Hospital $^{1-3}$	Oklahoma City	...	360	4,360	..	..	..	200
University of Orégon Medical School Hospitals and Clinics $^{1-3}$	Portland, Ore.	K. C. Swan	570	11,002	2	6	3	125
Geo. F. Geisinger Memorial Hospital $^{1-3}$	Danville, Pa.	...	154	5,216	..	2	2	165
Graduate Hospital of the University of Pennsylvania $^{1-3}$	Philadelphia	I. H. Leopold	758	1,969	2	2	3	100
Hospital of the University of Pennsylvania $^{1-3}$	Philadelphia	F. H. Adler	583	4,048	4	12	3	100
Jefferson Medical College Hospital $^{1-3}$	Philadelphia	C. R. Mullen	256	3,859	2	4	3	100
Philadelphia General Hospital $^{1-3}$	Philadelphia	T. H. Cowen	223	7,621	1	4	3	121
Temple University Hospital $^{1-3}$	Philadelphia	G. G. Gibson	336	3,620	1	3	3	...
Wills Eye Hospital	Philadelphia	...	5,538	94,748	7	14	2	100
Health Center Hospitals of the University of Pittsburgh School of Medicine								
Eye and Ear Hospital $^{1-3}$	Pittsburgh	M. F. McCaslin	2,653	10,590	2	6	3	125
Montefiore Hospital $^{1-3}$	Pittsburgh	H. E. Thorpe	612	2,386	1	3	3	225
Veterans Admin. Hospital $^{1-3}$	Pittsburgh	R. N. Lehman	101	.....	2	6	3	271
San Juan City Hospital $^{1-3}$	San Juan, P. R.	G. Pico	247	.....	2	4	2	250
Teaching Hospitals of the Medical College of South Carolina ^{1}	Charleston, S. C.	P. G. Jenkins	205	1,867	1	2	3	137
Medical College Hospital		...	...	.....	..	..	..	...
Roper Hospital		...	...	.....	..	..	..	...
City of Memphis Hospitals $^{1-3}$—Memphis Eye, Ear, Nose and Throat Hospital $^{1-3}$	Memphis	P. M. Lewis	10,779	4,828	2	6	3	150
Veterans Admin. Hospital $^{1-3}$	Memphis	A. C. Krause	131	8,369	1	3	3	271
Parkland Memorial Hospital $^{1-3}$	Dallas, Texas	C. W. Browning	328	4,817	4	7	3	150
Veterans Admin. Hospital $^{1-3-372}$	Dallas, Texas	S. B. Gostin	221	738	2	3	3	271
University of Texas Medical Branch Hospitals $^{1-3}$	Galveston, Texas	G. Robertson	375	5,212	1	3	3	100

Numerical and other references will be found on pages 788 through 790.

13. OPHTHALMOLOGY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
Baylor University College of Medicine Affiliated Hospitals		L. J. Girard	.....	.....	..	..	3	...
Jefferson Davis Hospital [1-3]	Houston, Texas		206	9,185	2	5	..	82.50
Veterans Admin. Hospital [1-3]	Houston, Texas		303	.....	2	6	..	270
Hermann Hospit[illegible]	Houston, Texas	T. L. Royce	782	1,643	1	3	3	125
Robert B. Green [illegible]	[illegible] Antonio, Texas	J. L. Mims	147	3,170	1	3	3	150
Scott and Whit[illegible]	Temple, Texas	E. R. Veirs	544	3,405	1	1	2	200
University of Virginia Hospital [1-3]	Charlottesville, Va.	E. W. Burton	362	3,059	2	4	3	75
Medical College of Virginia—Hospital Division [1-3]	Richmond, Va.	D. Guerry, III	235	6,772	1	3	3	75
Veterans Admin. Hospital [1-3]	Richmond, Va.	E. W. Perkins	152	2,763	1	3	3	271
Gill Memorial Eye, Ear and Throat Hospital [3]	Roanoke, Va.	E. G. Gill	.....	.....	2	2	3	300
King County Hospital Unit No. 1 (Harborview) [1-3]	Seattle	R. C. Laughlin	139	.....	..	2	2	200
University Hospitals [1-3]	Madison, Wis.	P. Duehr	602	2,553	2	4	3	100
Milwaukee County Hospital [1-3]	Milwaukee		...	.....	..	..	3	...
Veterans Admin. Hospital [1-3]	Milwaukee (Wood), Wis.	R. H. Lehman	309	3,384	1	2	3	271

14. ORTHOPEDIC SURGERY

Type of training acceptable to Board: A—Adult Orthopedics; C—Children's Orthopedics; F—Fractures. Residency programs in the following hospitals have been approved by the Council and the American Board of Orthopedic Surgery, through the Residency Review Committee for Orthopedic Surgery, as offering acceptable training in adult orthopedics, children's orthopedics, and fractures. Training in the basic sciences is given either as an integral part of these services or as a separate course. Services collaborating in an integral plan of training are designated by a program number, a list of which is found on pages 741 through 743.

Residents completing their training in these hospitals are eligible for full certification by the American Board *of Orthopedic Surgery, including children's orthopedic surgery.*

Hospitals, 294; Residencies, 1,096

Name of Hospital	Location	Chief of Service	Type of Training	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
UNITED STATES ARMY									
Fitzsimons Army Hospital [1-3]	Denver, Colo.	R. D. Anderson	AF	65	874	1	1	3	...
Army Medical Center [1-3]	Washington, D. C.	J. D. Blair	ACF	......	1,592	9	3	9	...
Tripler Army Hospital [1-3]	Honolulu, Hawaii	E. C. Lineberger	ACF	......	2,751	..	2	6	...
William Beaumont Army Hospital [3]	El Paso, Texas		AF	96	.....	..	..	..	...
Brooke Army Hospital [1-3]	San Antonio, Texas	H. S. McBurney	ACF	......	2,530	..	3	9	...
UNITED STATES NAVY									
U. S. Naval Hospital [1-3-203]	Bethesda, Md.	J. H. Cheffey	AF	20	944	..	2	6	...
U. S. Naval Hospital [1-3]	Philadelphia	W. D. Bundens, Jr.	AF	62	912	4	2	6	...
UNITED STATES PUBLIC HEALTH SERVICE									
U. S. Public Health Service Hospital [1-3]	San Francisco		AF	87	.....	..	..	..	...
NONFEDERAL AND VETERANS ADMINISTRATION									
University of Alabama Medical Center									
Crippled Children's Hospital [1-3]	Birmingham, Ala.	J. D. Sherrill	C	44, 68, 75	919	1	..	3	275
University Hospital and Hillman Clinic [1-3]	Birmingham, Ala.	J. D. Sherrill, Sr.	ACF	44	2,278	4	3	12	143
Veterans Admin. Hospital [1-3]	Birmingham, Ala.	M. A. Accinno	AF	44	287	..	..	3	271
Lloyd Noland Hospital [1-3-76]	Fairfield, Ala.	C. L. Yelton	AF	68	839	..	1	4	250
Mobile County Hospital [1-3]	Mobile, Ala.	A. R. Earl	ACF	......	525	2	1	2	275
Arkansas Children's Hospital [1]	Little Rock, Ark.	J. D. Christian	C	94	359	..	..	2	298
University Hospital	Little Rock, Ark.		AF	94	.....	..	..	..	...
Veterans Admin. Hospital	Little Rock, Ark.		AF	94	.....	..	..	..	...
Veterans Admin. Hospital [1-3]	Long Beach, Calif.	R. H. Hutchinson	AF	64	284	2	1	4	271
Children's Hospital [1]	Los Angeles		C	64	.....	..	..	..	...
Los Angeles County Hospital [1-90]	Los Angeles	C. Mason	ACF	......	4,192	77	5	19	259
Orthopaedic Hospital [1-3]	Los Angeles	J. V. Luck	ACF	14, 79, 90	2,745	..	4	8	200
Shriners Hospital for Crippled Children [1-3]	Los Angeles	G. W. Westin	C	3, 90	354	..	2	2	200
University of California Hospital [1-3]	Los Angeles	C. O. Bechtol	A	90	431	6	1	3	229
Veterans Admin. Hospital [1-3]	Los Angeles	R. Mazet, Jr.	AF	90	1,020	10	3	8	270
White Memorial Hospital [1-3-84]	Los Angeles	T. G. Reynolds	AF	14	812	4	2	4	215
Children's Hospital of the E[illegible]	[illegible] Calif.	B. Smart	C	2	467	..	1	1	225
Highland-Alameda County [illegible]	[illegible] Calif.	D. D. Dickson	AF	3	928	15	2	4	200
Samuel Merritt Hospital [1]	Oakland, Calif.	E. G. Ewer	AF	2	1,443	2	..	..	...
Children's Hospital [1-3]	San Francisco	L. J. Larsen	C	2	594	..	..	2	175
Franklin Hospital [1]	San Francisco	F. C. Bost	A	2	1,193	3	..	..	200
St. Mary's Hospital [1-3]	San Francisco	J. J. Loutzenheiser	AF	79	842	1	1	3	200
San Francisco Hospital [1]	San Francisco								
Stanford University Service [1]		F. J. Cox	AF	3	753	1	..	..	220
University of California Service [1]		R. K. Ashley	AF	2	842	4	1	3	220
San Francisco-Stanford Hospital	San Francisco		A	3	.....	..	..	..	...
Shriners Hospital for Crippled Children [1]	San Francisco	F. C. Bost	C	2	317	..	..	2	200
University of California Hospitals [1]	San Francisco	V. T. Inman	A	2	598	2	2	4	231
Veterans Admin. Hospital [1-3]	San Francisco	V. T. Inman, D. E. King	AF	2, 3	309	1	1	3	271
Harbor General Hospital [1]	Torrance, Calif.	S. S. Haft, W. B. Rhorer	AF	90	563	5	1	4	259
Children's Hospital [1-3]	Denver	I. E. Hendryson	C	4, 65	616	..	2	2	200
University of Colorado Medical Center									
Colorado General Hospital [1-3]	Denver	J. S. Miles	AF	4	367	13	2	8	180
Denver General Hospital [1-3]	Denver	J. Miles	AF	4	623	17	..	..	179

Numerical and other references will be found on pages 788 through 790.

14. ORTHOPEDIC SURGERY—Continued

Name of Hospital	Location	Chief of Service	Type of Training	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
Veterans Admin. Hospital [1-3]	Denver	M. E. Gibbens	AF	4	622	4	1	3	254
Yale-New Haven Medical Center									
Grace-New Haven Community Hospital [1-3]	New Haven, Conn.	W. O. Southwick	AF	5	955	5	..	3	30
Hospital of St. Raphael [3]	New Haven, Conn.	W. Perham	AF	43	626	8	2	6	175
Newington Home and Hospital for Crippled Children [1-3]	Newington, Conn.	B. H. Curtis	C	5, 82	458	..	..	5	200
Alfred I. Du Pont Institute of the Nemours Foundation [1-3]	Wilmington, Del.	A. R. Shands, Jr.	C	20, 62	232	..	..	2	150
Children's Hospital	Washington, D. C.	....	C	54	.....	..	..	..	...
District of Columbia General Hospital [1-3]	Washington, D. C.	M. Cobey, J. Adams	ACF	......	876	7	2	5	233
Washington Hospital Center [1-3]	Washington, D. C.	J. Neviaser	AF	54	638	4	1	3	215
Jackson Memorial Hospital [1-3]	Miami, Fla.	W. E. Miller	AF	76	1,841	3	3	9	225
Variety Children's Hospital [1-3]	Miami, Fla.	R. P. Keiser	C	76	458	..	..	..	...
Orange Memorial Hospital [1]	Orlando, Fla.	N. C. McCollough	ACF	......	1,925	1	1	4	325
American Legion Hospital for Crippled Children [1-3]	St. Petersburg, Fla.	....	C	78	.....	..	..	..	...
Tampa General Hospital [1-3]	Tampa, Fla	F. Lindeman	ACF	78	861	9	1	3	250
Georgia Baptist Hospital [1-3]	Atlanta, Ga.	....	AF	86	.....	..	..	..	...
Grady Memorial Hospital [1]	Atlanta, Ga.	R. P. Kelly	ACF	39	744	7	3	9	125
Medical College of Georgia Hospitals									
Eugene Talmadge Memorial Hospital [1-3]	Augusta, Ga.	T. F. Bliven	AF	86	273	2	2	6	250
University Hospital [1-3]	Augusta, Ga.	J. L. Chandler	ACF	86	660	2	1	2	200
Emory University Hospital	Emory University, Ga.	R. P. Kelly	A	39	582	..	..	3	245
Shriners Hospitals for Crippled Children [1]	Honolulu, Hawaii	I. J. Larsen	C	50	166	..	1	1	100
Cook County Hospital	Chicago	F. Shapiro	ACF	......	856	6	2	5	140
Michael Reese Hospital [1-3]	Chicago	J. Finder	AC	42	1,165	3	1	3	125
Northwestern University Medical Center									
Chicago Wesley Memorial Hospital [1-3]	Chicago	E. L. Compere	ACF	7	1,771	10	2	4	125
Passavant Memorial Hospital [1-3]	Chicago	E. D. W. Hauser	A	7	827	..	2	2	125
Veterans Admin. Research Hospital [1-3]	Chicago	E. L. Compere	AF	7	306	2	1	2	271
Evanston Hospital [1-3]	Evanston, Ill.	V. C. Turner	AF	7	670	4	1	1	225
St. Elizabeth Hospital [3]	Chicago	C. S. Scuderi	F	12	1,166	2	1	1	200
Presbyterian-St. Luke's Hospital [1-3-411]	Chicago	C. N. Lambert	AF	47	402	1	1	2	125
Shriners Hospitals for Crippled Children [1-3]	Chicago	H. A. Sofield	C	50	285	..	3	3	...
University of Chicago Clinics [1-3]	Chicago	C. H. Hatcher	ACF	......	598	7	1	4	200
University of Illinois Research and Educational Hospitals [1-3]	Chicago	R. D. Ray	ACF	47	1,162	11	2	8	145
St. Francis Hospital [1-3]	Evanston, Ill.	J. J. Fahey	AF	7	1,038	5	2	3	240
Veterans Admin. Hospital [1-3]	Hines, Ill.	H. A. Sofield	AF	50	1,178	13	4	16	270
West Suburban Hospital [1-3]	Oak Park, Ill.	H. A. Sofield	AF	50	527	..	1	1	225
St. Francis Hospital [1-3]	Peoria, Ill.	H. F. Cooper, Sr.	ACF	......	2,169	2	1	3	225
Indiana University Medical Center [1]	Indianapolis	G. Garceau	ACF	8	723	4	4	7	225
Marion County General Hospital [1-3]	Indianapolis	H. Williams	AF	8	740	21	1	4	210
St. Vincent's Hospital [1-3]	Indianapolis	G. Garceau	AF	8	1,158	2	1	3	275
Veterans Admin. Hospital [1-3]	Indianapolis	G. J. Garceau	AF	8	530	6	..	..	271
Veterans Admin. Hospital [1-3]	Des Moines, Iowa	D. N. Gibson	AF	55	1,404	20	1	3	271
State University of Iowa Hospitals [1-3]	Iowa City, Iowa	C. B. Larson	ACF	55	2,251	10	4	12	175
University of Kansas Medical Center [1-3]	Kansas City, Kan.	L. Peltier	ACF	......	664	8	..	4	125
Veterans Admin. Hospital [1-3]	Wadsworth, Kan	L. F. Peltier	AF	18	240	7	..	..	271
St. Francis Hospital [1-3]	Wichita, Kan.	W. R. Miller	ACF	......	1,538	4	1	3	...
Good Samaritan Hospital [1-3]	Lexington, Ky.	K. R. Thompson	ACF	59	1,605	2	1	1	225
St. Joseph Hospital [1-3]	Lexington, Ky.	T. R. Miller	ACF	59	698	2	1	3	230
Kosair Crippled Children Hospital [1-3]	Louisville, Ky	K. A. Fischer, C. F. Wood	C	9	550	..	4	4	200
Louisville General Hospital [1-3]	Louisville, Ky.	K. A. Fischer	AF	9	447	4	1	4	83
Veterans Admin. Hospital [1-3]	Louisville, Ky.	K. A. Fischer	AF	9	440	2	1	2	270
Charity Hospital of Louisiana									
Independent Unit [1]	New Orleans	L. N. Loomis	ACF	......	504	6	1	4	100
Louisiana State University Unit [1]	New Orleans	H. T. Simon	ACF	......	957	9	3	10	100
Tulane University Unit [1]	New Orleans	J. K. Wickstrom	ACF	10	1,190	17	3	12	100
Ochsner Foundation Hospital [1-3-176]	New Orleans	H. D. Morris	AF	56	445	..	1	4	225
Touro Infirmary [1]	New Orleans	G. D. B. Berkett	ACF	10, 56	1,263	1	..	3	125
Veterans Admin. Hospital [1-3]	New Orleans	R. H. Alldredge	AF	10	410	1	2	6	271
Confederate Memorial Medical Center [1-3]	Shreveport, La.	C. R. Reed	ACF	70	1,058	4	2	8	...
Shriners Hospital for Crippled Children [1]	Shreveport, La.	R. E. King	C	70	233	..	..	2	200
Baltimore City Hospitals [1-3]	Baltimore	R. A. Robinson	AF	57	332	3	..	1	150
Childrens Hospital [1-3]	Baltimore	G. O. Eaton	C	57	563	..	..	..	160
James Lawrence Kernan Hospital for Crippled Children [1-3]	Baltimore	A. F. Voshell	C	88	545	1	..	2	250
Johns Hopkins Hospital [1-3]	Baltimore	R. A. Robinson	AF	57	1,107	7	..	9	25
University Hospital [1]	Baltimore	....	AF	88	.....	..	..	..	...
Boston City Hospital [1]	Boston	A. P. Aitken	AF	13, 66	1,994	5	..	7	152
Children's Medical Center [1-3]	Boston	W. T. Green	C	11, 93	1,195	..	10	16	42
Lahey Clinic [1-3]	Boston	G. E. Haggart	A	66	1,525	1	4	4	200
Massachusetts General Hospital [1-3]	Boston	J. S. Barr	ACF	11	11,130	..	..	..	67
Peter Bent Brigham Hospital [1-3]	Boston	W. T. Green	AF	93	Incl. in Surg.		..	1	62
Veterans Admin. Hospital [1-3]	Boston (Jamaica Plain)	A. Thibodeau	AF	13	761	3	2	6	292
Massachusetts Hospital School [1]	Canton, Mass.	P. L. Norton	C	13, 66	190	..	..	2	...
Lakeville State Sanatorium [3]	Middleboro, Mass.	P. L. Norton	C	13, 66	481	7	..	2	487
Shriners Hospital for Crippled Children [3]	Springfield, Mass.	G. D. Hough, Jr.	C	66	315	..	..	2	150
University Hospital [1-3-215]	Ann Arbor, Mich.	C. E. Badgley	ACF	......	1,380	4	4	13	195
Veterans Admin. Hospital	Dearborn, Mich.	....	AF	12	.....	..	..	..	...
Children's Hospital [1-3]	Detroit	F. J. Fischer	C	12	370	..	..	..	225
Harper Hospital [1-3]	Detroit	F. J. Fischer	A	12	869	3	2	2	250
Henry Ford Hospital [1-3]	Detroit	C. L. Mitchell	ACF	......	1,322	4	4	12	295
Receiving Hospital [1-3]	Detroit	A. Goetz	F	12	563	9	..	2	303
Blodgett Memorial Hospital [1-3]	Grand Rapids, Mich.	C. H. Frantz	ACF	......	512	2	1	3	300
St. Mary's Hospital [1-3]	Grand Rapids, Mich.	G. T. Aitken	ACF	......	777	2	1	4	300
Borgess Hospital [1-3]	Kalamazoo, Mich.	R. G. Howard	ACF	......	900	4	1	4	275
Minneapolis General Hospital [1-3]	Minneapolis	M. J. Nydahl	AF	89	167	2	..	1	220

Numerical and other references will be found on pages 788 through 790.

14. ORTHOPEDIC SURGERY—Continued

Name of Hospital	Location	Chief of Service	Type of Training	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered	Total Residencies Offered	Beginning Stipend (Month)
Shriners Hospital for Crippled Children [1-3]	Minneapolis	D. R. Lannin	C	16	201	..	2	2	200
University of Minnesota Hospitals [1-3]	Minneapolis	J. H. Moe	ACF	......	381	3	3	11	220
Veterans Admin. Hospital [1-3]	Minneapolis	E. T. Evans	AF	16	817	0	1	8	271
Mayo Foundation [1]	Rochester, Minn.	H. H. Young	ACF	......	5,067	20	8	32	175
Gillette State Hospital for Crippled Children [1-3]	St. Paul	J. Moe	C	16, 89	896	5	..	..	233
Mississippi Baptist Hospital [1-3]	Jackson, Miss.	J. G. Caden	ACF	73	1,414	1	1	2	270
University Hospital [1-3]	Jackson, Miss.	W. F. Enneking	AF	73	387	3	1	4	250
Veterans Admin. Hospital [1-3]	Jackson, Miss.	W. F. Enneking	AF	73	374	..	..	..	271
University of Missouri Medical Center [1-3]	Columbia, Mo.	H. E. Stephenson	ACF	61	61	..	1	4	200
Children's Mercy Hospital [1-3]	Kansas City, Mo.	R. A. McCanse	C	18	208	..	..	2	175
Kansas City General Hospital [1-3]	Kansas City, Mo.	G. Pipkin	AF	18	604	18	..	2	220
St. Luke's Hospital [1-3]	Kansas City, Mo.	R. L. Diveley	ACF	18	601	1	1	3	310
Veterans Admin. Hospital [1-3]	Kansas City, Mo.	R. L. Diveley	AF	18	148	2	..	..	271
Barnes Hospital [1-3-240]	St. Louis	F. Reynolds	ACF	60	1,338	4	4	12	50
St. Louis City Hospital [1-3]	St. Louis	J. O. Lottes, R. Lord	F	46, 60	619	4	..	2	250
St. Mary's Group of Hospitals [1-3]	St. Louis	R. M. O'Brien	ACF	46	879	3	2	6	100
Shriners Hospital for Crippled Children [1]	St. Louis	G. E. Scheer	C	60	467	..	..	3	150
Veterans Admin. Hospital [1-3]	St. Louis	O. P. Hampton, Jr.	AF	61	410	4	1	3	271
Nebraska Orthopedic Hospital [1]	Lincoln, Neb.	F. Teal	C	33	517	..	1	1	150
Veterans Admin. Hospital [1-3]	Lincoln, Neb.	J. E. M. Thomson	AF	33	501	2	..	3	270
Dartmouth Medical School Affiliated Hospitals									
Mary Hitchcock Memorial Hospital [1-3]	Hanover, N. H.	O. S. Staples	AF	82	841	1	1	3	218
Veterans Admin. Hospital [1-3]	White River Jct., Vt.	O. S. Staples	F	82	841	1	1	3	218
Monmouth Medical Center [1-3]	Long Branch, N. J.	B. M. Halbstein	ACF	......	829	4	1	3	200
Hospital for Crippled Children [1-3]	Newark, N. J.	H. Kessler, A. D. Agostini	AC	67	1,875	1	1	4	150
Hospital Center at Orange		H. T. Hansen	ACF	......	......	..	..	..	...
New Jersey Orthopaedic Hospital [1-3]	Orange, N. J.	....	.....	......	766	1	2	5	150
Orange Memorial Hospital [1-3]	Orange, N. J.	....	.....	......	656	1	..	..	...
St. Joseph Hospital [1-3]	Paterson, N. J.	R. R. Goldenberg	ACF	......	738	4	3	3	200
Carrie Tingley Hospital for Crippled Children [1-3]	Truth or Consequences, N. Mex.	W. C. Edwards	C	4, 95, 96	468	1	2	4	225
Albany Hospital [1-3]	N. Y.	C. J. Campbell	AF	45	913	7	1	4	160
House of St. Giles th	N. Y.	D. M. Bosworth	C	26, 41	152	..	1	3	100
Jewish Chronic Dise	N. Y.	M. Schneider	C	84	106	2	..	1	200
Jewish Hospital [1-3]	Brooklyn, N. Y.	A. Kenin	AF	81	630	1	1	3	100
Kings County Hospital [1-3-202]	Brooklyn, N. Y.	R. F. Warren	ACF	......	639	5	3	7	145
St. Charles Hospital [1-3]	Brooklyn, N. Y.	H. C. Fett	C	52	324	..	4	4	125
Veterans Admin. Hospital [1-3]	Brooklyn, N. Y.	S. E. Chessid	AF	52	368	6	2	4	292
Buffalo General Hospital [1-3]	Buffalo	B. E. Obletz	AF	24	937	3	2	4	175
Children's Hospital [1-3]	Buffalo	J. D. Godfrey	C	24	557	1	..	4	175
Edward J. Meyer Memorial Hospital [1-3]	Buffalo	J. P. Cole	AF	83	998	2	1	3	247
Veterans Admin. Hospital [1-3]	Buffalo	W. M. Chardack	AF	24	937	3	1	3	271
Meadowbrook Hospital [1-3]	Hempstead, N. Y.	O. C. Hudson	F	38	2,000	17	..	4	225
Nassau Hospital [1-3]	Mineola, N. Y.	C. Freese	AF	38	1,566	2	1	3	325
Bellevue Hospital Center									
Div. IV—New York University									
Post-Graduate Medical School [1-3-275]	New York City	W. A. L. Thompson	ACF	51	506	..	4	12	145
Bronx Municipal Hospital Center [1-3]	New York City	A. I. Schildhaus	ACF	......	342	7	2	6	145
Hospital for Joint Diseases [1-3]	New York City	J. E. Milgram	ACF	......	3,268	11	6	18	80
Hospital for Special Surgery [1]	New York City	T. C. Thompson	ACF	22	2,132	4	4	12	160
Metropolitan Hospital [1-3]	New York City	M. J. Wilson	AF	67	557	..	3	5	145
Mount Sinai Hospital [1-3]	New York City	R. K. Lippmann	ACF	......	431	2	1	4	75
New York Polyclinic Medical School and Hospital [1-3]	New York City	D. M. Bosworth	F	26	287	2	..	1	125
Presbyterian Hospital (New York Orthopaedic Dispensary and Hospital) [1]	New York City	F. E. Stinchfield	ACF	......	2,405	3	6	24	266
St. Luke's Hospital [1-3]	New York City	D. M. Bosworth	ACF	41	710	2	1	3	100
Veterans Ad	New York City	T. C. Thompson	AF	22	829	5	2	4	293
Veterans Ad	New York City	G. Truchly	AF	80	436	2	..	5	271
St. Charles	Jefferson, N. Y.	F. S. Child	C	38, 43	481	..	3	3	150
l [1-3]	Rochester, N. Y.	M. L. Rowe	A	31	793	7	..	..	200
08	Rochester, N. Y.	R. B. Duthie	ACF	31	976	..	3	8	117
	Schenectady, N. Y.	W. Dunham	ACF	......	1,705	3	1	3	150
St. Vincent's Hospital [1-3]	Staten Island, N. Y.	D. M. Bosworth	F	26	538	..	1	1	240
Sea View Hospital [1-3]	Staten Island, N. Y.	D. M. Bosworth	A	26	197	2	4	4	145
State University of New York									
Upstate Medical Center [1-3]	Syracuse, N. Y.	J. Dougherty	ACF	48	1,063	7	..	3	233
Hospital of the Good Shepherd		....	CF	......	......	..	..	..	...
Syracuse Memorial Hospital		....	C	......	......	..	..	..	...
Veterans Admin. Hospital		....	A	......	......	..	..	..	...
New York State Rehabilitation Hospital [1-3]	West Haverstraw, N. Y.	J. C. McCauley	C	51, 80	702	2	..	4	230
North Carolina Memorial Hospital [1-3]	Chapel Hill, N. C.	B. Raney	ACF	81	440	2	2	5	175
Duke University Affiliated Hospitals									
Duke Hospital [1-3-314]	Durham, N. C.	L. Baker	ACF	19	947	2	6	19	127
Veterans Admin. Hospital [1-3]	Durham, N. C.	F. W. Clippinger	AF	19	401	3	..	8	270
North Carolina Orthopedic Hospital	Gastonia, N. C.	W. M. Roberts	C	19, 81	396	..	3	3	150
North Carolina Baptist Hospital [1-3]	Winston-Salem, N. C.	H. F. Forsyth	AF	77	920	3	3	6	166
Akron City Hospital [1-3]	Akron, Ohio	A. E. Davis	AF	15	707	..	2	6	250
Akron General Hospital [1-3]	Akron, Ohio	D. I. Minnig	AF	58	1,192	3	..	3	250
Mary Day, Nursery and Children's Hospital [1]	Akron, Ohio	D. I. Minnig	C	15, 58	995	..	..	2	250
University of Cincinnati College of Medicine Hospital Group									
Children's Hospital [1]	Cincinnati	J. A. Freiberg	C	17	......	..	..	..	...
Cincinnati General Hospital [1-3]	Cincinnati	J. Freiberg	AF	17	207	4	2	7	75
Veterans Admin. Hospital	Cincinnati	....	A	17	......	..	..	..	...
Jewish Hospital [1-3]	Cincinnati	R. Perlman	A	17	766	7	..	1	215
Cleveland Clinic Hospital [1-3-266]	Cleveland	J. I. Kendrick	ACF	......	782	8	2	4	250
St. Luke's Hospital [1-3]	Cleveland	W. H. McGaw	ACF	......	1,144	3	1	5	200
University Hospitals [1-3]	Cleveland	C. H. Herndon	ACF	27	1,063	7	..	9	155
Veterans Admin. Hospital [1-3]	Cleveland	R. D. Hass	A	27	454	2	2	4	271

Numerical and other references will be found on pages 788 through 790.

14. ORTHOPEDIC SURGERY—Continued

Name of Hospital	Location	Chief of Service	Type of Training	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
Children's Hospital $^{1-3}$	Columbus, Ohio	H. B. Lacey	C	25	627	..	..	4	225
Mount Carmel Hospital $^{1-3}$	Columbus, Ohio	H. B. Lacey	AF	25	1,173	6	1	2	275
Ohio State University Hospitals									
University Hospital $^{1-3}$	Columbus, Ohio	W. S. Smith	AF	25	563	4	..	5	302
White Cross Hospital $^{1-3-337}$	Columbus, Ohio	J. D. Wilson	AF	25	1,033	5	1	2	290
Elyria Memorial Hospital $^{1-3}$	*Elyria, Ohio*	*J. M. Strong*	*C*	27	775	2	..	2	270
St. Vincent's Hospital $^{1-3}$	Toledo, Ohio	A. L. Bershon	ACF	......	1,280	7	1	3	325
Youngstown Hospital $^{1-3}$	Youngstown, Ohio	W. D. McElroy	AF	71	1,321	2	1	2	325
Bone and Joint Hospital $^{3-347}$	Oklahoma City	E. Margo	AF	53	2,396	2	1	4	300
St. Anthony Hospital	Oklahoma City	W. K. West	AF	53	1,803	3	1	2	300
University of Oklahoma Medical Center		D. H. O'Donoghue	.....	......	.....	..	3	13	...
University Hospital $^{1-3-348}$	Oklahoma City	....	ACF	53	1,200	2	..	..	200
Veterans Admin. Hospital ^{1}	Oklahoma City	W. K. West	AF	53	602	5	..	2	271
Emanuel Hospital $^{1-3}$	Portland, Ore.	J. A. Mason	AF	28	2,407	6	..	2	275
Shriners Hospital for Crippled Children $^{1-3}$	Portland, Ore.	L. S. Lucas	C	28	366	..	..	2	150
University of Oregan Medical School Hospitals and Clinics $^{1-3}$	Portland, Ore.	W. E. Snell	AF	28	3,671	13	2	8	125
Veterans Admin. Hospital $^{1-3}$	Portland, Ore.	R. C. Merrifield	AF	91	624	1	2	6	270
Geo. F. Geisinger Memorial Hospital $^{1-3}$	Danville, Pa.	L. F. Bush	AF	6	771	5	2	4	175
State Hospital for Crippled Children ^{1}	Elizabethtown, Pa.	T. Outland	C	21, 92	341	..	..	..	326
Hamot Hospital $^{1-3}$	Erie, Pa.	C. W. Fortune	ACF	......	1,815	4	1	4	250
Albert Einstein Medical Center $^{1-3}$	Philadelphia	A. M. *Rechtman*	ACF	......	809	4	1	4	125
Children's Hospital $^{1-3}$	Philadelphia	J. T. Nicholson	C	23, 72	228	..	..	..	75
Graduate Hospital of the University of Pennsylvania $^{1-3-356}$	Philadelphia	J. T. Nicholson	A	23	293	3	1	1	100
Hahnemann Medical College and Hospital $^{1-3}$	Philadelphia	E. O. Geckeler	AF	92	937	..	2	5	75
Hospital of the University of Pennsylvania $^{1-3}$	Philadelphia	D. Grice	ACF	......	724	7	2	7	62
Jefferson Medical College Hospital $^{1-3}$	Philadelphia	A. F. De Palma	ACF	21	1,122	4	2	10	100
Pennsylvania Hospital $^{1-3}$	Philadelphia	J. T. Nicholson	F	23	218	4	..	..	...
Philadelphia General Hospital $^{1-3}$	Philadelphia	I. Stein	ACF	......	1,078	66	2	7	121
Shriners Hospital for Crippled Children $^{1-3}$	Philadelphia	J. R. Moore	C	29	224	..	1	4	75
Temple University Hospital $^{1-3}$	Philadelphia	J. R. Moore	AF	29	1,362	6	1	5	...
Allegheny General Hospital $^{1-3}$	Pittsburgh	P. B. Steele, J. A. Heberling	ACF	69, 71, 83	1,992	14	1	4	200
Health Center Hospitals of the University of Pittsburgh School of Medicine									
Children's Hospital $^{1-3}$	Pittsburgh	A. B. Ferguson	C	6, 30, 45	752	..	..	5	150
Presbyterian Hospital $^{1-3}$	Pittsburgh	A. B. Ferguson	AF	30	750	6	..	2	125
Veterans Admin. Hospital $^{1-3}$	Pittsburgh	P. G. Laing	AF	30	1,156	10	..	3	271
St. Francis General Hospital and Rehabilitation Institute $^{1-3}$	Pittsburgh	M. S. De Roy	A	69	1,246	..	1	2	210
Reading Hospital $^{1-3}$	Reading, Pa.	E. J. Morrissey	AF	72	289	9	1	4	...
Robert Packer Hospital $^{1-3}$	Sayre, Pa.	D. R. Baker	ACF	......	920	3	1	3	225
Rhode Island Hospital $^{1-3}$	Providence, R. I.	K. G. Burton	ACF	......	1,847	2	1	4	125
Teaching Hospitals of the Medical College of South Carolina ^{1}	Charleston, S. C.	J. A. Siegling	ACF	......	578	1	1	3	137
Medical College Hospital		....	.....	......	......	..	..	..	...
Roper H[illegible]		....	.....	......	......	..	..	..	...
Columbi[illegible]	[illegible] S. C.	W. A. Boyd	ACF	......	1,616	5	1	3	175
Greenvill[illegible]	[illegible] S. C.	L. Meyer	AF	19	2,077	8	..	3	300
Shriners Hospital for Crippled Children $^{1-3}$	Greenville, S. C.	F. H. Stelling	C	19, 77	349	..	..	..	150
Baroness Erlanger Hospital $^{1-3}$	Chattanooga, Tenn.	J. J. Killeffer	ACF	......	1,974	9	2	5	350
East Tennessee Baptist Hospital $^{1-3}$	Knoxville, Tenn.	G. A. L. Inge	AF	85	1,201	4	..	1	330
East Tennessee Crippled Children's Hospital $^{1-3}$	Knoxville, Tenn.	G. L. Inge	C	85	456	..	..	2	320
St. Mary's Memorial Hospital ^{3}	Knoxville, Tenn.	R. G. Brashear	AF	85	1,547	..	..	..	250
University of Tennessee Memorial Research Center and Hospital ^{1}	Knoxville, Tenn.	G. Inge	AF	85	566	4	2	5	320
Campbell Clinic Hospital ^{3}	Memphis, Tenn.	J. S. Speed	ACF	......	2,301	1	8	13	50
Veterans Admin. Hospital $^{1-3}$	Memphis, Tenn.	D. M. Street	AF	1	886	8	1	8	271
Vanderbilt University Hospital $^{1-3}$	Nashville, Tenn.	J. W. Hillman	ACF	......	898	3	1	3	50
Baylor University Hospital ^{3}	Dallas, Texas	M. P. Knight	A	32	2,567	2	1	3	180
Parkland Memorial Hospital $^{1-3}$	Dallas, Texas	C. Gregory	F	32	940	6	..	..	...
Texas Scottish Rite Hospital for Crippled Children $^{1-3}$	Dallas, Texas	B. Carrell	C	32	530	..	1	3	125
Veterans Admin. Hospital $^{1-3}$	Dallas, Texas	V. M. Bryant	AF	75	1,122	4	2	4	271
Hotel Dieu-Sisters Hospital	El Paso, Texas	....	AF	95	......	..	..	..	...
University of Texas Medical Branch Hospitals $^{1-3}$	Galveston, Texas	G. W. N. Eggers, Sr.	ACF	......	777	7	3	6	160
Baylor University College of Medicine Affiliated Hospitals									
Jefferson Davis Hospital $^{1-3}$	Houston, Texas	F. A. Bloom	ACF	49	783	13	..	4	82.50
Veterans Admin. Hospital $^{1-3}$	Houston, Texas	E. M. Cowart	AF	49	986	8	..	4	270
Hermann Hospital $^{1-3}$	Houston, Texas	E. T. Smith	ACF	......	1,926	7	1	5	125
Scott and White Memorial Hospitals $^{1-3}$	Temple, Texas	R. A. Murray	ACF	......	1,769	1	1	3	300
Dr. W. H. Groves Latter-Day Saints Hospital $^{1-3}$	Salt Lake City	S. W. Allred	AF	63	1,600	4	2	3	275
Primary Children's Hospital $^{1-3}$	Salt Lake City	S. W. Allred	C	63	551	..	..	2	200
Salt Lake County General Hospital $^{1-3}$	Salt Lake City	....	F	34	......	..	1	2	220
Shriners Hospitals for Crippled Children $^{1-3}$	Salt Lake City	S. S. Coleman	C	87	205	..	..	2	...
Veterans Admin. Hospital $^{1-3}$	Salt Lake City	....	A	34	......	..	1	2	220
University of Virginia Hospital $^{1-3}$	Charlottesville, Va.	J. H. Allan	ACF	......	852	3	2	6	75
Crippled Children's Hospital $^{1-3}$	Richmond, Va.	J. T. Tucker	C	35	371	..	..	2	200
Medical College of Virginia—Hospital Division $^{1-3}$	Richmond, Va.	M. J. Hoover	AF	35	1,384	11	3	9	75
Veterans Admin. Hospital $^{1-3}$	Richmond, Va.	R. D. Butterworth	AF	35	539	2	1	4	271
Children's Orthopedic Hospital $^{1-3}$	Seattle	J. Le Cocq	C	36, 91	679	1	..	3	180
King County Hospital Unit No. 1 (Harborview) $^{1-3}$	*Seattle*	J. F. Le Cocq	AF	36	776	31	..	2	270
Providence Hospital $^{1-3}$	Seattle	H. W. Rickett	A	36	2,266	3	1	1	300
Veterans Admin. Hospital $^{1-3}$	Seattle	J. W. Bell	A	36	204	2	1	1	271
University Hospitals $^{1-3}$	Madison, Wis.	R. Burns	ACF	......	1,135	3	..	5	100
Columbia Hospital $^{1-3}$	Milwaukee	A. C. Schmidt	AF	37	676	5	3	3	270
Milwaukee Children's Hospital $^{1-3}$	Milwaukee	B. J. Brewer	C	37, 40	487	..	..	..	...
Veterans Admin. Hospital $^{1-3}$	Milwaukee (Wood), Wis.	P. L. Carnesale	AF	40	1,079	15	2	2	271

Numerical and other references will be found on pages 788 through 790.

14. ORTHOPEDIC SURGERY—Continued

Residency programs in the following hospitals have been approved by the Council and the American Board of Orthopedic Surgery, through the Residency Review Committee for Orthopedic Surgery, as offering acceptable training in adult orthopedics and fractures. Training in the basic sciences is given as an integral part of these services or as a separate course. Services collaborating in an integral plan of training are designated by a program number, a list of which is found on pages 741 through 743.

Residents completing three years of training in Adult Orthopedics and Fractures at these hospitals are eligible for limited certification by the American Board of Orthopedic Surgery, not to include children's orthopedic surgery.

Hospitals, 14; Residencies, 56

Name of Hospital	Location	Chief of Service	Type of Training	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered [4]	Total Residencies Offered [5]	Beginning Stipend (Month)
UNITED STATES AIR FORCE									
U. S. Air Force Hospital	San Antonio, Texas	E. W. Brannon	AF	......	1,963	3	2	8	...
UNITED STATES ARMY									
Letterman Army Hospital [1-3]	San Francisco	L. W. Taylor	AF	......	1,191	2	3	9	...
UNITED STATES NAVY									
U. S. Naval Hospital [1-3]	Oakland, Calif.	H. A. Streit	AF	......	1,537	..	2	6	...
U. S. Naval Hospital [1-3]	Chelsea, Mass.	W. S. Stryker	AF	......	853	..	1	3	...
U. S. Naval Hospital [1-3]	Portsmouth, Va.	C. A. Stevenson	AF	......	1,914	1	2	6	...
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE									
Freedmen's Hospital [1-3]	Washington, D. C.	J. R. Gladden	AF	......	426	4	1	1	308
NONFEDERAL AND VETERANS ADMINISTRATION									
San Diego County General Hospital [1]	San Diego, Calif.	K. M. Kimball	AF	......	449	2	1	2	250
St. Joseph's Hospital [1-3]	San Francisco	R. Soto Hall	AF	......	902	4	1	3	300
Methodist Hospital [1]	Indianapolis	W. H. Norman	AF	......	1,829	8	1	2	278
Mercy Hospital [1-3]	Iowa City	A. Steindler	AF	......	746	..	2	2	125
Worcester City Hospital [1-3]	Worcester, Mass.	W. Eddy	AF	......	756	7	2	3	250
Queens Hospital Center [1-3]	Jamaica, N. Y.	A. Lewert	AF	......	258	2	1	3	145
Charlotte Memorial Hospital [1]	Charlotte, N. C.	C. R. Carr	AF	......	1,808	4	1	3	295
Mount Sinai Hospital [1-3]	Cleveland	A. Miller	AF	......	954	6	1	2	215
Veterans Admin. Hospital [1-3-360]	Philadelphia	J. S. Deakins	AF	......	369	3	..	3	270

Residency programs in the following hospitals have been approved by the Council and the American Board of Orthopedic Surgery, through the Residency Review Committee for Orthopedic Surgery, as offering acceptable training in children's orthopedic surgery as an independent program. Some of these services also participate in an integrated program offering full training in all categories of Orthopedic Surgery and are also listed on pages 737 through 741.

Hospitals, 14; Residencies, 25

Name of Hospital	Location	Chief of Service	Type of Training	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered	Total Residencies Offered	Beginning Stipend (Month)
NONFEDERAL AND VETERANS ADMINISTRATION									
Childrens Hospital [1]	Los Angeles	S. Mathews	C	......	442	..	..	1	275
Shriners Hospital for Crippled Children [1-3]	Los Angeles	G. W. Weston	C	......	354	..	2	2	200
Children's Hospital of the East Bay [1-3]	Oakland, Calif.	B. Smart	C	......	467	.	1	1	225
Newington Home and Hospital for Crippled Children [1-3]	Newington, Conn.	B. H. Curtis	C	......	458	.	..	5	200
Hope Haven Hospital [3]	Jacksonville, Fla.	....	C	......	......	..	..	..	...
American Legion Hospital for Crippled Children [1-3]	St. Petersburg, Fla.	C. L. Farrington	C	......	470	..	..	1	150
Scottish Rite Hospital for Crippled Children	Decatur, Ga.	J. H. Kite	C	......	261	..	1	1	200
Children's Memorial Hospital [1-3]	Chicago	C. N. Pease	C	......	645	..	..	2	75
Shriners Hospital for Crippled Children [1-3]	Lexington, Ky.	T. D. Yocum	C	......	46	..	..	2	200
Children's Mercy Hospital [1-3]	Kansas City, Mo.	R. A. McCanse	C	......	208	..	..	2	175
Carrie Tingley Hospital for Crippled Children [1-3]	Truth or Consequences, N. Mex.	W. C. Edwards	C	......	468	1	2	4	225
Primary Children's Hospital [1-3]	Salt Lake City	S. W. Allred	C	......	551	..	..	2	200
Shriners Hospitals for Crippled Children [1]	Spokane, Wash.	N. R. Brown	C	......	234	..	..	2	175

ORTHOPEDIC SURGERY—PROGRAM IDENTIFICATION

Program Number	Hospital	Location
2.	Children's Hospital of the East Bay	Oakland, Calif.
	Samuel Merritt Hospital	Oakland, Calif.
	Veterans Admin. Hospital	San Francisco
	Children's Hospital	San Francisco
	Franklin Hospital	San Francisco
	San Francisco Hospital	San Francisco
	Shriners Hospital for Crippled Children	San Francisco
	[illegible]	San Francisco
3.	[illegible]	Los Angeles
	[illegible]	Oakland, Calif.
	[illegible]	San Francisco
	[illegible]	San Francisco
	Stanford University Hospital	San Francisco
4.	Children's Hospital	Denver
	[illegible]	Denver
	[illegible]	Denver
	[illegible] for Crippled Children	Truth or Consequences, N. Mexico
5.	Grace-New Haven Community Hospital	New Haven, Conn.
	Newington Home and Hospital for Crippled Children	Newington, Conn.
6.	George F. Geisinger Memorial Hospital	Danville, Pa.
	Children's Hospital	Pittsburgh
7.	Chicago Wesley Memorial Hospital	Chicago
	Passavant Memorial Hospital	Chicago
	Veterans Admin. Research Hospital	Chicago
	Evanston [illegible]	Evanston, Ill.
	St. Franc [illegible]	Evanston, Ill.
	Primary [illegible]	[illegible] Lake City
8.	Veterans [illegible]	Indianapolis
	Indiana [illegible]	Indianapolis
	Marion [illegible]	Indianapolis
	St. Vincent's [illegible]	Indianapolis
9.	Veterans Adm [illegible]	Louisville, Ky.
	Kosair Crippl [illegible]	Louisville, Ky.
	Louisville Ger [illegible]	Louisville, Ky.
10.	Veterans Adm [illegible]	New Orleans
	Charity Hospital of Louisiana Tulane University Unit	New Orleans
	Touro [illegible]	[illegible] Orleans
11.	Childre [illegible]	Boston
	Massac [illegible]	Boston
12.	Veterar [illegible]	Dearborn, Mich.
	Children's [illegible]	Detroit
	Harper [illegible]	Detroit
	Receivin [illegible]	Detroit

Numerical and other references will be found on pages 788 through 790.

14. ORTHOPEDIC SURGERY—Continued

ORTHOPEDIC SURGERY—PROGRAM IDENTIFICATION

Program Number	Hospital	Location
13.	Veterans Admin. Hospital	Boston
	Boston City Hospital	Boston
	Massachusetts Hospital School	Canton, Mass.
	Lakeville State Sanatorium	Middleboro, Mass.
14.	Orthop	Los Angeles
	White "	Los Angeles
15.	Mary I	Akron, Ohio
	Akron City Hospital	Akron, Ohio
16.	Veterans Admin.	Minneapolis
	Shriners Hospital	linneapolis
	Gillette State Ho.	St. Paul
17.	Children's Hospital	Cincinnati
	Cincinnati General Hospital	Cincinnati
	Jewish Hospital	Cincinnati
	Veterans Admin. Hospital	Cincinnati
18.	Veterans Admin. Hospital	sas
	Children's Mercy Hospital	Mo.
	Kansas City General Hospi	Io.
	St. Luke's Hospital	Mo.
	Veterans Admin. Hospital	Mo.
19.	[illegible]	C.
	[illegible]	Durham, N. C.
	[illegible]	Gastonia, N. C.
	[illegible]	Greenville, S. C.
	[illegible]	Greenville, S. C.
20.	Alfred I. du Pont Institute of the Nemours Foundation	Wilmington, Del.
	U. S. Naval	Bethesda, Md
21.	State Hospit	[illegible]
	Jefferson Me	[illegible]
22.	Veterans Adi	[illegible]
	Hospital for Special Surgery	New York City
23.	Children's Hospital	Philadelphia
	Graduate Hospital of the University	Philadelphia
	[illegible]	Philadelphia
24.	[illegible]	Buffalo
	[illegible]	Buffalo
	Children's	Buffalo
25.	Children's	Ohio
	Mount Car	Ohio
	Ohio State University Hospital	Columbus, Ohio
	White Cros	Columbus, Ohio
26.	House of	Brooklyn
	New York School and Hospital	New York City
	St. Vincent's Hospital	Staten Island, N. Y.
	Seaview	Staten Island, N. Y.
27.	Universi	Cleveland
	Veterar	Cleveland
	Elyria "	Elyria, Ohio
28.	Emanuel	Portland, Oregon
	Shriners	Portland, Oregon
	Universit Hospital and Clinics	Portland, Oregon
29.	Shriners Hospital for Crippled Children	Philadelphia
	Temple University Hospital	Philadelphia
30.	Children's Hospital	Pittsburgh
	Presbyteri	Pittsburgh
	Veterans	Pittsburgh
31.	[illegible]	Rochester, N. Y.
	[illegible]	Rochester, N. Y.
32.	[illegible]	Dallas, Texas
	[illegible]	Dallas, Texas
	Texas Scottish Rite Hospital for Crippled Children	Dallas, Texas
33.	Nebraska Orthopedic Hospital	Lincoln, Nebr.
	Veterans Admin. Hospital	Lincoln, Nebr.
34.	Veterans Admin. Hospital	Salt Lake City
	Salt Lake County General Hospital	Salt Lake City
	Shriners Hospital for Crippled Children	Salt Lake City
35.	Veterans Admin. Hospital	Richmond, Va.
	Crippled Children's Hospital	Richmond, Va.
	Medical College of Virginia-Hospital Div	Richmond, Va.
36.	Veterans Admin. Hospital	Seattle
	Children's Orthopedic Hospital	Seattle
	King County Hospital, Unit 1 (Harborview)	Seattle
	Providence Hospital	Seattle
37.	Columbia Hospital	Milwaukee
	Milwaukee Children's Hospital	Milwaukee
38.	Meadowbrook Hospital	Hempstead, N. Y.
	Nassau Hospital	Mineola, N. Y.
	St. Charles Hospital	Port Jefferson, N. Y.
39.	Grady Memorial Hospital	Atlanta, Ga.
	Emory University Hospital	Emory University, Ga.
40.	Veterans Admin. Hospital	Milwaukee
	Milwaukee Children's Hospital	Milwaukee
41.	House of St. Giles the Cripple	Brooklyn
	St. Luke's Hospital	New York City
42.	Michael Reese Hospital	Chicago
	St. Elizabeth's Hospital	Chicago
43.	Hospital of St. Raphael	New Haven, Conn.
	St. Charles Hospital	Port Jefferson, N. Y.
44.	Veterans Admin. Hospital	Birmingham, Ala
	Crippled Children'	Birmingham, Ala.
	University Hospit	Birmingham, Ala
45.	Albany Hospital	Albany, N. Y.
	Children's	Pittsburgh
46.	St. Louis	St. Louis
	St. Mary's	St. Louis
47.	Presbyteri	Chicago
	University of Illinois Research and Educational Hospital	Chicago
48.	Hospital of th	Y.
	State Univ. of N	Y.
	Syracuse Memorial Hospital	Syracuse, N. Y.
	Veterans Admin. Hospital	Syracuse, N. Y.
49.	Veterans Admin. Hospital	Houston, Texas
	Jefferson Davis Hospital	Houston, Texas
50.	Veterans Admin.	Illinois
	Shriners Hospital	Chicago
	Shriners Hospital	Hawaii
	West Suburb	Oak Park, Ill.
51.	Bellevue Hos University	New York City
	Rehabilitation Hospital	West Haverstraw, N. Y.
52.	Veterans Admin.	oklyn
	St. Charles Hospi	oklyn
53.	Veterans Admin. I	City
	Bone and Joint Hospital	Oklahoma City
	Mercy Hospital-Oklahoma City General Hospital	Oklahoma City
	St. Anthony Hospital	Oklahoma City
	University Hospitals	Oklahoma City
54.	Washington Hospital Center	C.
	Children's Hospital	C.
55.	Veterans Admin. Hospital	Des Moines, Iowa
	University Hospitals	Iowa City
56.	Ochsner Foundation Hospital	New Orleans
	Touro Infirmary	New Orleans
57.	Children's Hospital School	Baltimore
	Johns Hopkins Hospital	Baltimore
	Baltimore City Hospital	Baltimore
58.	Akron General Hospital	Akron, Ohio
	Mary Day Nursery and Children's Hospital	Akron, Ohio
59	Good Samaritan Hospital	Lexington, Ky.
	St. Joseph's Hospital	Lexington, Ky.
60.	Barnes	St. Louis
	St. Loui	St. Louis
	Shriners	St. Louis
61.	Universi	mbia, Mo.
	Veterans Admin. Hospital	St. Louis, Mo.
62.	Alfred I. du Pont Institute of the Nemours Foundation	Wilmington, Del.
	U. S. Naval Hospital	Philadelphia
63.	Dr. W. H. Groves Latter-Day Saints Hospital	Salt Lake City
	Primary Children's Hospital	Salt Lake City
64.	Veterans Admin. Hospital	Long Beach, Calif.
	Children's Hospital Center	Los Angeles, Calif.
65.	Children's Hospital	Denver
	Fitzsimons Army Hospital	Denver
66.	Boston City Hospital	Boston
	[illegible]	Boston
	[illegible]	Canton, Mass.
	[illegible]	Springfield, Mass.
	[illegible]	Middleboro, Mass.
67.	Hospital for Crippled Children	Newark, N. J.
	[illegible]	New York City
68.	ital	Birmingham, Ala.
	[illegible]	Fairfield, Ala.
69.	Allegheny General Hospital	Pittsburgh, Pa.
	St. Francis General and Rehabilitation Institute	Pittsburgh, Pa.
70.	Confederate Memorial Hospital	Shreveport, La.
	Shriners Hospital for Crippled Children	Shreveport, La.
71.	Allegheny General Hospital	Pittsburgh, Pa.
	[illegible]	Youngstown, Ohio
72.	[illegible]	Philadelphia
	[illegible]	Reading, Pa.
73.	[illegible]	Jackson, Miss.
	[illegible]	Jackson, Miss.
	[illegible]	Jackson, Miss.
75.	[illegible]	Birmingham, Ala.
	Vc	Dallas, Texas
76.	Ja	Miami, Florida
	Vi	Miami, Florida
77.	Nc	[illegible]
	Sh	[illegible]
78.	Tr	[illegible]
	Ar	[illegible]
	[illegible]	St. Petersburg, Fla.
79.	Orthopaedic Hospital	Los Angeles, Calif.
	St. Mary's Hospital	San Francisco, Calif.
	[illegible]	New York City
80.	Veterans Admin. Hospital	Y.
	Rehabilitation	'ar.
81.	North Carolina	'ar.
	North Carolina	Gastonia
82.	Newington Hor	Newington, Conn.
	Mary Hitchcocl	Hanover, N. Hamp.
	Veterans Admin. Hospital	White River Jct., Vt.
83.	Edw. J. Meyer Mem'l Hospital	Buffalo, N. Y.
	Allegheny General Hospital	Pittsburgh

Numerical and other references will be found on pages 788 through 790.

14. ORTHOPEDIC SURGERY—Continued

ORTHOPEDIC SURGERY—PROGRAM IDENTIFICATION

Program Number	Hospital	Location
84.	Jewish Chronic Disease Hospital	Brooklyn, N. Y.
	Jewish Hospital	Brooklyn, N. Y.
85.	East Tennessee Baptist Hospital	Knoxville, Tenn.
	East Tennessee Crippled Children's Hospital	Knoxville, Tenn.
	St. Mary's Memorial Hospital	Knoxville, Tenn.
	University of Tennessee Memorial Research Center & Hospital	Knoxville, Tenn.
86.	Georgia Baptist Hospital	Atlanta, Ga.
	Eugene Talmadge Memorial Hospital	Augusta, Ga.
	University Hospital	Augusta, Ga.
87.	U. S. Public Health Service Hospital	San Francisco
	Shriners Hospital for Crippled Children	Salt Lake City
88.	University Hospital	Baltimore
	James Lawrence Kernan Hospital for Crippled Children	Baltimore
89.	Minneapolis General Hospital	Minneapolis
	University of Minnesota Hospitals	Minneapolis
	Gillete State Hospital for Crippled Children	St. Paul
90.	Orthopedic Hospital	Los Angeles
	Shriners Hospital for Crippled Children	Los Angeles
	University of California Hospital	Los Angeles
	Veterans Admin. Hospital	Los Angeles
	Harbor General Hospital	Torrance, Calif.
91.	Veterans Admin. Hospital	Portland, Ore.
	Children's Orthopedic Hospital	Seattle
92.	State Hospital for Crippled Children	Elizabethtown, Pa.
	Hahnemann Medical College Hospital	Philadelphia
93.	Children's Hospital	Boston
	Peter Bent Brigham Hospital	Boston
94.	Arkansas Children's Home & Hospital	Little Rock, Ark.
	[illegible]	Little Rock, Ark.
	[illegible]	Little Rock, Ark.
95.	[illegible]	
	Cripp[illegible]	[illegible]equences, N. Mex.
	Hotel [illegible]	El Paso, Texas
96.	Carrie [illegible]	
	Crippled Children	Truth or Consequences, N. Mex.
	William Beaumont Army Hospital	El Paso, Texas

15. OTOLARYNGOLOGY

Residency programs in the following hospitals have been approved by the Council, the American Board of *Otolaryngology and the American College of Surgeons, through the Residency Review* Committee for Otolaryngology, as offering acceptable training in the specialty.

Hospitals, 127; Residencies, 501

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered *	Total Residencies Offered *	Beginning Stipend (Month)
UNITED STATES ARMY							
Fitzsimons Army Hospital [1-3]	Denver		.....	.....	..	..	...
Army Medical Center [1-3]	Washington, D. C.	[illegible]	757	14,923	2	6	...
Brooke Army Hospital [1-3]	San Antonio, Texas	[illegible]	792	12,016	2	6	...
UNITED STATES NAVY							
U. S. Naval Hospital [1-3]	Oakland, Calif.	M. Schiff	870	8,125	1	3	...
U. S. Naval Hospital [1]	San Diego, Calif.	L. E. Wible	1,539	14,276	1	3	...
U. S. Naval Hospital [1-3]	Bethesda, Md.	S. J. Ryan	1,233	7,285	1	3	...
U. S. Naval Hospital [1]	Philadelphia	W. C. Livingood	690	5,319	1	3	...
NONFEDERAL AND VETERANS ADMINISTRATION							
University of Alabama Medical Center							
University Hospital and Hillman Clinic [1-3]	Birmingham, Ala.	F. S. Moody	794	2,689	1	3	143
Veterans Admin. Hospital [1-3]	Birmingham, Ala.	E. [illegible]	158	258	..	1	271
Los Angeles County Hospital [1-88]	Los Angeles	A. [illegible]	1,483	22,155	2	6	250
Los Angeles Eye and Ear Hospital [1-3-88]	Los Angeles	A. [illegible]	.....	3,187	..	2	...
University of California Hospital [1-3]	Los Angeles	J. J. Pressman	525	8,308	1	3	220
Veterans Admin. Hospitals [1-3-98]	Los Angeles	C. S. Mumma	627	7,574	..	2	270
White Memorial Hospital [1-3]	Los Angeles	L. R. House	1,195	5,291	1	4	215
Stanford Medical Center and Associated Hospitals [1-3-175]							
Palo Alto-Stanford Hospital Center	Palo Alto, Calif.	L. Shahinian	.....	.....	..	..	...
Veterans Admin. Hospital	Palo Alto, Calif.	.....	.....	.....	..	..	...
Community Hospital of San Mateo	San Mateo, Calif.	.....	.....	.....	..	..	...
Santa Clara County Hospital	San Jose, Calif.	.....	.....	.....	..	..	...
University of California Hospitals [1]	San Francisco	F. A. Sooy	542	6,732	2	8	231
San Francisco Hospital [1-29]	San Francisco	G. McCoy	110	1	1	2	220
Veterans Admin. Hospital [1-3-112]	San Francisco	W. P. Work	397	443	1	3	271
Yale-New Haven Medical Center							
Grace-New Haven Community Hospital [1-3]	New Haven, Conn.	J. A. Kirchner	966	5,088	1	3	50
Washington Hospital Center [1-3]	Washington, D. C.	[illegible]	677	2,246	2	6	215
Jackson Memorial Hospital [1-3]	Miami, Fla.	[illegible]	770	4,228	1	3	225
Tampa General Hospital [1-3]	Tampa, Fla.		764	3	1	3	250
Northwestern University Medical Center							
Chicago Wesley Memorial Hospital [1-3]	Chicago	G. E. Shambaugh, Jr.	1,843	.....	2	2	125
Cook County Hospital [1-3]	Chicago	S. J. Pearlman	1,201	27,528	1	3	140
Michael Reese Hospital [1-3-29]	Chicago	.....	.....	.....	..	..	...
Veterans Admin. Research Hospital [1-3-20]	Chicago	G. E. Shambaugh	165	8	..	1	271
Presbyterian-St. Luke's Hospital [1-3-411]	Chicago	S. A. Friedberg	2,128	.....	2	3	125
University of Chicago Clinics [1-3]	Chicago	J. R. Lindsay	769	9,320	2	5	200
University of Illinois Hospitals							
Illinois Eye and Ear Infirmary [1-3]	Chicago	F. L. Lederer	924	32,495	5	16	145
Research and Educational Hospitals [1-3]	Chicago	F. L. Lederer	657	12,400	..	4	145
Veterans Admin. Hospital [1-3-152]	Hines, Ill.	F. Lederer	435	.....	1	4	270
Indiana University Medical Center and Affiliated Hospitals							
Indiana University Medical Center Hospital [1]	Indianapolis	M. W. Manion	400	.....	2	4	225
Marion County General Hospital [1-3-29]	Indianapolis	D. E. Brown	447	5,515	1	3	210
State University of Iowa Hospitals [1-3]	Iowa City	D. M. Lierle	2,783	15,639	5	15	175
Veterans Admin. Hospital [1-3-20]	Iowa City	E. L. Grandon	222	2,250	..	1	300
University of Kansas Medical Center [1-3]	Kansas City, Kan.	G. O. Proud	831	13,375	1	4	125
Kansas City General Hospital [1-3-29]	Kansas City, Kan.	P. A. Barelli	301	4,050	1	3	220
Veterans Admin. Hospital [1-3-29]	Kansas City, Mo.	H. A. Knauff	252	3	..	..	271
University of Louisville Medical Center							
Louisville General Hospital [1-3]	Louisville, Ky.	W. C. Wolfe	43	2,904	1	3	83
Veterans Admin. Hospital [1-3]	Louisville, Ky.	H. Oppenheim	154	707	1	2	270
Charity Hospital of Louisiana							
Louisiana State University Unit [1]	New Orleans	V. H. Fuchs	1,043	8,065	2	5	100
Tulane University Unit [1]	New Orleans	H. G. Tabb	915	8,238	2	6	100
Eye, Ear, Nose and Throat Hospital [3]	New Orleans	W. A. Wagner	3,697	13,387	2	8	100
Baltimore Eye, Ear and Throat Hospital [1-3]	Baltimore	J. Snyder	3,967	7,780	1	3	150

Numerical and other references will be found on pages 788 through 790.

15. OTOLARYNGOLOGY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered *	Total Residencies Offered *	Beginning Stipend (Month)
Johns Hopkins Hospital $^{1-3}$	Baltimore	J. E. Bordley	1,614	8,624	2	7	25
Mercy Hospital $^{1-3}$	Baltimore	T. A. Schwartz	1,769	2,344	1	3	275
South Baltimore General Hospital ^{3}	Baltimore	S. L. Fox	822	735	1	2	200
University Hospital ^{1}	Baltimore	.....	.....	.....	..	..	...
Boston City Hospital ^{1}	Boston	A. J. Gorney	1,538	14,911	2	8	132
Massachusetts Eye and Ear Infirmary $^{1-3}$	Boston	L. A. Schall	Incl. in Ophthalmology		4	14	200
Veterans Admin. Hospital $^{1-3}$	Boston (Jamaica Plain)	J. C. Trakas	290	.....	1	3	271
Beth Israel Hospital $^{1-3-20}$	Boston	B. Zonderman	316	1,594	..	1	157
University Hospital $^{1-3-215}$	Ann Arbor, Mich.	J. H. Maxwell	641	7,868	3	12	100
Harper Hospital $^{1-3}$	Detroit	A. E. Hammond	3,565	1,937	2	6	275
Henry Ford Hospital $^{1-3}$	Detroit	J. L. Dill	1,589	25,840	2	6	265
Receiving Hospital $^{1-3}$	Detroit	J. E. Croushore	659	8,655	1	3	303
University of Minnesota Hospitals $^{1-3}$	Minneapolis	L. R. Boies	613	4,315	3	9	220
Minneapolis General Hospital $^{1-3-29}$	Minneapolis	J. H. Glaeser	308	2,456	..	1	220
Ancker Hospital $^{1-3-29}$	St. Paul	D. Kusske	304	3,189	..	1	220
Veterans Admin. Hospital $^{1-3}$	Minneapolis	L. R. Boies	258	.....	..	3	271
Mayo Foundation ^{1}	Rochester, Minn.	K. M. Simonton	1,625	23,820	2	7	175
Homer G. Phillips Hospital $^{1-3}$	St. Louis	J. W. West	322	.....	2	6	235
St. Mary's Group of Hospitals $^{1-3}$	St. Louis	B. J. McMahon	725	3,089	1	3	100
Washington University Hospitals							
Barnes Hospital $^{1-3}$	St. Louis	T. Walsh	3,468	9,278	4	16	75
McMillan Hospital		.....	.....	.....	..	..	...
St. Louis City Hospital $^{1-3-29}$	*St. Louis*	*G. Hardy*	167	3,768	2	3	234
Veterans Admin. Hospital $^{1-3-298}$	East Orange, N. J.	P. Lindenberg	214	21	1	2	270
Newark Eye and Ear Infirmary ^{3}—Harrison S. Martland Medical Center $^{1-3}$	Newark, N. J.	E. P. Cardwell	2,506	4,074	3	7	162
Albany Hospital $^{1-3}$	Albany, N. Y.	B. M. Volk	615	1	1	3	160
Brooklyn Eye and Ear Hospital $^{1-3}$	Brooklyn, N. Y.	J. P. Baker	6,018	28,866	2	6	100
Kings County Hospital $^{1-3}$	Brooklyn, N. Y.	I. A. Polisar	644	4,913	1	4	125
Long Island College Hospital $^{1-3}$	Brooklyn, N. Y.	C. R. Weeth	678	1,267	..	2	150
Buffalo General Hospital $^{1-3}$	Buffalo	H. E. Bozer	726	834	1	3	175
City Hospital at Elmhurst $^{1-3}$	Elmhurst, N. Y.	C. A. Seelig	386	3,078	1	3	125
Bellevue Hospital Center							
Div. IV-New York University Post-Graduate Medical School $^{1-3-300}$	New York City	J. Daly	2,571	19,558	4	16	125
Harlem Eye and Ear Hospital $^{1-3}$	New York City	E. Grabscheid	2,803	22,517	1	3	100
Manhattan Eye, Ear and Throat Hospital $^{1-3}$	New York City	D. C. Baker, Jr.	6,983	35,069	6	12	100
Mount Sinai Hospital $^{1-3}$	New York City	J. L. Goldman	1,533	6,110	1	4	75
New York Eye and Ear Infirmary $^{1-3}$	New York City	J. S. Hanley	2,974	31,330	4	12	50
New York Hospital $^{1-3}$	New York City	J. Moore	1,601	8,747	1	4	164
New York Polyclinic Medical School and Hospital $^{1-3}$	New York City	W. W. Morrison	318	5,850	..	..	125
Presbyterian Hospital ^{1}	New York City	E. P. Fowler	3,511	18,205	4	8	250
Roosevelt Hospital ^{3}	New York City	R. C. Grove	541	3,765	1	3	166
St. Luke's Hospital $^{1-3}$	New York City	D. R. McCuaig	930	9,143	1	3	100
Veterans Admin. Hospital (Bronx) $^{1-3}$	New York City	H. Kolson	298	.....	1	4	271
Strong Memorial—Rochester Municipal Hospital $^{1-3}$	Rochester, N. Y.	C. A. Heatly	1,104	.....	1	3	117
State University of New York Upstate Medical Center $^{1-3}$	Syracuse, N. Y.	A. Doust	.....	2,587	1	3	233
North Carolina Memorial Hospital $^{1-3}$	Chapel Hill, N. C.	N. D. Fischer	108	3,818	..	2	175
Duke University Affiliated Hospitals							
Duke Hospital $^{1-3}$	Durham, N. C.	W. W. Eagle	773	6,422	4	8	200
Veterans Admin. Hospital $^{1-3-29}$	Durham, N. C.	R. A. Arnold	99	3	1	2	270
McPherson Hospital $^{1-3}$	Durham, N. C.	G. B. Ferguson	1,158	14,768	1	3	200
North Carolina Baptist Hospital $^{1-3}$	Winston-Salem, N. C.	J. Harrill	599	1,700	1	3	166
University of Cincinnati College of Medicine Hospital Group							
Cincinnati General Hospital $^{1-3}$	Cincinnati	H. Goodyear	498	4,339	1	3	100
Cleveland Clinic Hospital $^{1-3-330}$	Cleveland	H. E. Harris	1,158	16,292	2	6	250
St. Luke's Hospital $^{1-3}$	Cleveland	F. W. Alexander	2,870	1,885	1	4	200
University Hospitals of Cleveland $^{1-3}$	Cleveland	W. Maloney	1,069	2,847	..	2	...
Veterans Admin. Hospital $^{1-3-29}$	Cleveland	V. Jordan	290	.....	1	3	271
Ohio State University Hospitals							
Childrens Hospital $^{1-3}$	Columbus, Ohio	E. Harris	1,646	1,726	..	..	...
University Hospital $^{1-3}$	Columbus, Ohio	E. W. Harris	532	1	2	8	177
University of Oklahoma Medical Center		O. A. Watson	.....	.....	1	3	...
University Hospital $^{1-3}$	Oklahoma City	.....	194	3,454	..	..	200
Veterans Admin. Hospital	Oklahoma City	.....	.....	.....	..	..	...
University of Oregon Medical School							
Hospitals and Clinics $^{1-3}$	Portland, Ore.	D.	749	4,646	1	3	125
Veterans Admin. Hospital $^{1-3-29}$	Portland, Ore.	G.	133	577	..	1	270
[illegible] Hospital $^{1-3}$	Danville, Pa.	F.	1,034	10,193	1	3	175
[illegible] $^{1-3}$	Philadelphia	B. J. Ronis	923	1,545	2	2	100
Hospital of the University of Pennsylvania $^{1-3}$	Philadelphia	H. P. Schenck	1,094	4,250	2	8	...
Jefferson Medical College Hospital $^{1-3}$	Philadelphia	F. Harbert	1,502	5,384	2	4	100
Temple University Hospital $^{1-3}$	Philadelphia	D. Myers	2,663	3,256	2	8	...
Health Center Hospitals of the University of Pittsburgh School of Medicine							
Eye and Ear Hospital $^{1-3-304}$	Pittsburgh	T. B. McCollough, K. M. Day	5,459	7,768	1	4	125
Veterans Admin. Hospital $^{1-3}$	Pittsburgh	S. L. Kyler	581	12	1	3	271
Mercy Hospital $^{1-3}$	Pittsburgh	J. A. Perrone	2,019	1,762	..	2	235
Rhode Island Hospital $^{1-3}$	Providence, R. I.	R. W. Pearson	2,434	2,842	1	2	125
Teaching Hospitals of the Medical College of South Carolina ^{1}	Charleston, S. C.	R. M. Hope	324	1,032	1	3	137
Medical College Hospital		.....	.....	.....	..	..	...
Roper Hospital		.....	.....	.....	..	..	...
City of Memphis Hospitals $^{1-3}$	Memphis	S. Sanders	522	3	1	3	150
Veterans Admin. Hospital $^{1-3}$	Memphis	T. C. Maguda	454	4,039	1	3	271
Veterans Admin. Hospital $^{1-3-372}$	Dallas, Texas	D. A. Corgill	362	966	1	3	233
University of Texas Medical Branch Hospitals $^{1-2}$	Galveston, Texas	J. M. Robison, Sr.	384	5,844	2	5	100
Baylor University College of Medicine Affiliated Hospitals							
Jefferson Davis Hospital $^{1-3}$	Houston, Texas	H. H. Harris	209	7,461	..	..	62.50

Numerical and other references will be found on pages 788 through 790.

15. OTOLARYNGOLOGY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered *	Total Residencies Offered *	Beginning Stipend (Month)
Methodist Hospital $^{1-3}$	Houston, Texas	J. C. Dickson	1,231	.....	1	1	220
Veterans Admin. Hospital $^{1-3}$	Houston, Texas	H. H. Harris	333	14	1	3	270
University of Vetmont Affiliated Hospitals							
DeGoesbriand Memorial Hospital $^{1-3}$	Burlington, Vt.	R. Morrow	419	1	1	3	167
Mary Fletcher Hospital $^{1-3}$	Burlington, Vt	R. C. Morrow, Jr.	386	2	1	3	100
University of Virginia Hospital $^{1-3}$	Charlottesville, Va.	G. S. Fitz Hugh	1,180	1,788	1	4	75
Medical College of Virginia-Hospital Division $^{1-3}$	Richmond, Va.	P. N. Pastore	1,689	4,389	2	4	75
Gill Memorial Eye, Ear and Throat Hospital ^{3}	Roanoke, Va.	E. G. Gill	.....	.....	2	2	200
University Hospitals $^{1-3}$	Madison, Wis	C. Taborsky	610	2,086	1	4	100
Veterans Admin. Hospital $^{1-3}$	Milwaukee (Wood), Wis.	R. H. Lehman	476	3,078	1	2	271

16. PATHOLOGY

Residency programs in the following hospitals have been approved by the Council and the American Board of Pathology as offering acceptable training in the specialty. Services which have been evaluated on the basis of training in the two categories, pathologic anatomy and clinical pathology, are designed as follows: a - Pathologic anatomy only; C—clinical pathology only; p - pathologic anatomy and clinical pathology.

Hospitals, 688; Residencies, 2,743

Name of Hospital	Location	Chief of Service	Number of Autopsies	Total Number of Laboratory Examinations	Number of Surgical Specimens	Number Examined Microscopically	First Year Residencies Offered *	Total Residencies Offered *	Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES AIR FORCE										
U. S. Air Force Hospital	San Antonio, Texas	D. Auld	309	461,609	20,080	20,000	1	8	4^p	...
UNITED STATES ARMY										
Letterman Army Hospital $^{1-3}$	San Francisco	N. S. Irey	317	577,814	6,363	6,252	2	8	4^p	...
Fitzsimons Army Hospital $^{1-3}$	Denver	H. E. Shuey	162	437,293	6,205	6,205	2	8	4^p	...
Armed Forces Institute of Pathology $^{1-3}$	Washington, D. C.	E. W. Goodpasture	28,097	....	40,878	40,878	..	20	1^a	...
Army Medical Center $^{1-3}$	Washington, D. C.	R. S. Aronson	332	971,603	6,666	6,522	2	8	4^p	...
Tripler Army Hospital $^{1-3}$	Honolulu, Hawaii	H. E. Shuey	197	535,188	6,884	6,884	1	4	4^p	...
William Beaumont Army Hospital $^{1-3}$	El Paso, Texas	R. E. Kellenberger	170	609,081	3,739	3,335	1	4	4^p	...
Brooke Army Hospital $^{1-3}$	San Antonio, Texas	G. J. Matt	319	1,000,491	8,141	8,141	2	8	4^p	...
Madigan Army Hospital $^{1-3}$	Tacoma, Wash.	P. W. Palmer	172	247,853	3,456	3,450	..	2	4^p	...
UNITED STATES NAVY										
U. S. Naval Hospital $^{1-3}$	Oakland, Calif.	H. V. O'Connell	169	308,106	6,429	6,429	1	4	4^p	...
U. S. Naval Hospital ^{1}	San Diego, Calif.	G. E. Meador	134	735,210	8,121	8,121	2	8	4^p	...
U. S. Naval Hospital $^{1-3}$	Bethesda, Md.	J. S. Shaver	212	511,184	24,799	24,799	2	8	4^p	...
U. S. Naval Hospital ^{1}	St. Albans, N. Y.	S. S. Sarkisian	130	368,453	10,393	10,393	1	4	4^p	...
U. S. Naval Hospital ^{1}	Philadelphia	B. H. Smith, Jr.	205	249,859	9,555	9,555	1	4	4^p	...
UNITED STATES PUBLIC HEALTH SERVICE										
U. S. Public Health Service Hospital $^{1-3}$	New Orleans	A. L. Steplock	77	163,595	3,977	3,977	..	3	3^p	...
U. S. Public Health Service Hospital ^{1}	Baltimore	J. A. Smith	81	162,853	2,999	2,623	1	4	4^p	...
National Institutes of Health—Clinical Center $^{1-3}$	Bethesda, Md.	H. Stewart, G. Z. Williams	290	308,428	2,108	2,108	5	12	4^p	...
U. S. Public Health Service Hospital $^{1-3}$	Stapleton, S. I., N. Y.	T. L. Perrin	171	366,899	4,333	3,859	1	6	4^p	...
U. S. Public Health Service Hospital $^{1-3-387}$	Seattle	B. S. Eggertsen	165	102,017	3,664	3,307	1	2	2^p	...
NONFEDERAL AND VETERANS ADMINISTRATION										
Birmingham Baptist Hospitals $^{1-3}$	Birmingham, Ala.	A. E. Casey	231	456,973	11,394	11,391	1	4	4^p	300
Carraway Methodist Hospital ^{1}	Birmingham, Ala.	J. Cunningham, B. Bishop	70	198,008	2,455	2,455	1	4	4^p	250
University of Alabama Medical Center										
University Hospital and Hillman Clinic $^{1-3}$	Birmingham, Ala.	J. F. A. McManus	464	263,318	5,902	5,902	3	9	4^p	143
Veterans Admin. Hospital $^{1-3}$	Birmingham, Ala.	B. M. Hathaway	167	262,595	2,235	2,235	1	1	3^a	271
Lloyd Noland Hospital $^{1-3}$	Fairfield, Ala.	W. F. Scott, Jr.	87	157,638	3,526	3,135	1	1	1^a	250
Mobile General Hospital $^{1-3}$	Mobile, Ala.	E. Wert	518	910,058	1,126	1,426	2	2	2^a	275
Good Samaritan Hospital ^{1}	Phoenix, Ariz.	J. D. Barger	188	164,223	9,307	5,704	1	3	4^p	300
Maricopa County General Hospital $^{1-3}$	Phoenix, Ariz.	M Rosenthal	330	245,403	1,871	1,724	1	3	2^a	300
St. Joseph's Hospital $^{1-3}$	Phoenix, Ariz.	L. A. Stapley	240	205,242	7,189	5,541	1	4	4^p	250
Arkansas Baptist Hospital ^{1}	Little Rock, Ark.	E. L. Wilbur	139	159,425	6,505	4,641	2	3	2^a	400
University Hospital ^{1}	Little Rock, Ark.	H. Schlumberger	260	241,768	6,811	6,697	1	4	4^p	275
Veterans Admin. Hospitals		....	...	....	....	....	..	..	3^p	...
Veterans Admin. Hospital $^{1-3}$	Little Rock, Ark.	C. F. Shukers	234	244,759	2,464	2,464	2	2	..	270
Veterans Admin. Hospital ^{1}	No. Little Rock, Ark.	T. T. Frost	63	55,095	354	256	..	..	..	...
Kern County General Hospital $^{1-3}$	Bakersfield, Calif.	R. W. Huntington	284	162,566	4,107	2,750	1	3	4^p	350
Herrick Memorial Hospital $^{1-3}$	Berkeley, Calif.	H. R. Fishback	126	89,848	3,648	3,167	1	3	4^p	300
St. Joseph Hospital $^{1-3}$	Burbank, Calif.	R. Straus	137	175,866	5,888	5,808	1	4	4^p	250
City of Hope Medical Center $^{1-3}$	Duarte, Calif.	G. D. Amromin	235	150,000	1,736	1,736	1	2	1^p	400
Glendale Sanitarium and Hospital $^{1-3}$	Glendale, Calif.	A. F. Brown	223	119,894	5,582	3,975	1	4	4^p	325
Loma Linda Sanitarium and Hospital $^{1-3-81}$	Loma Linda, Calif.	J. C. Roos	288	229,002	4,864	4,603	..	6	4^p	265
St. Mary's Long Beach Hospital ^{3}	Long Beach, Calif.	T. Kiddie	125	176,919	8,033	4,473	1	2	3^p	270
Seaside Memorial Hospital $^{1-3}$	Long Beach, Calif.	J. A. Tuta	170	195,450	8,090	5,947	1	4	4^p	275
Veterans Admin. Hospital $^{1-3}$	Long Beach, Calif.	B. E. Konwaler	575	468,803	3,231	3,234	2	6	4^p	271
California Hospital $^{1-3}$	Los Angeles	A. Wright	189	174,258	6,284	4,805	1	3	3^a	225
Cedars of Lebanon Hospital $^{1-3}$	Los Angeles	N. B. Friedman	293	191,869	7,751	7,627	2	8	4^p	265
Children's Hospital ^{1}	Los Angeles	R. Cleland, D. Stowens	295	157,571	886	886	1	2	1^a	275
Hospital of the Good Samaritan $^{1-3}$	Los Angeles	L. J. Trageman	195	159,398	6,387	4,634	2	2	4^p	275
Los Angeles County Hospital ^{1}	Los Angeles	E. M. Butt	2,658	1,092,795	17,091	14,457	3	12	4^p	259
Mount Sinai Hospital $^{1-3}$	Los Angeles	L. Kaplan	85	99,292	3,251	3,070	2	2	1^p	...
Queen of Angels Hospital $^{1-3}$	Los Angeles	J. H. Cremin	262	162,050	6,542	4,914	1	3	4^p	275
St. Vincent's Hospital ^{3}	Los Angeles	J. E. Kahler	91	158,900	6,420	4,185	1	1	2^p	350
University of California Hospital $^{1-3}$	Los Angeles	S. C. Madden	340	142,583	3,898	3,880	3	9	4^p	229
Veterans Admin. Hospital $^{1-3}$	Los Angeles	B. G. Fishkin	814	605,834	5,104	5,104	4	12	4^p	270

Numerical and other references will be found on pages 788 through 790.

16. PATHOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of Autopsies	Total Number of Laboratory Examinations	Number of Surgical Specimens	Number Examined Microscopically	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
White Memorial Hospital [1-3]	Los Angeles	O. B. Pratt	261	333,747	6,432	4,982	2	4	4[p]	215
Highland-Alameda County Hospital [1-3]	Oakland, Calif.	R. J. Parsons	411	155,895	3,959	3,349	1	4	3[a]	200
Kaiser Foundation Hospital [1-3]	Oakland, Calif.	M. Friedman	428	359,849	16,230	13,132	2	5	4[p]	315
Samuel Merritt Hospital [1]	Oakland, Calif.	C. P. Baker	130	257,327	6,164	4,596	1	4	4[p]	197
Veterans Admin. Hospital [3]	Oakland, Calif.	B. Gerstl	363	172,813	5,427	5,427	2	8	4[p]	270
Stanford Medical Center and Associated Hospitals	Palo Alto, Calif.	A. J. Cox, Jr.	400	148,232	5,337	5,337	2	5	4[p]	175
Palo Alto-Stanford Hospital Center	Palo Alto, Calif.	....	.....	....	.....	.....	..	..	..	...
Veterans Admin. Hospital	Palo Alto, Calif.	....	.....	....	.....	.....	..	..	..	...
Collis P. and Howard Huntington Memorial Hospital [1-3]	Pasadena, Calif.	D. S. Shillam, R. D. Lewis	220	226,034	9,628	8,076	2	5	4[p]	300
Sequoia Hospital [1-3]	Redwood City, Calif.	S. Lindsay	110	135,093	5,154	4,566	1	1	2[p]	350
Mercy Hospital	*Sacramento, Calif.*	....	.....	....	.....	.....	..	..	4[p]	...
Sacramento County Hospital [1-3]	Sacramento, Calif.	M. D. Moon	510	311,248	2,954	2,900	1	4	4[p]	300
San Bernardino County Charity Hospital	San Bernardino, Calif.	J. D. Kirshbaum	393	140,534	5,638	4,411	2	2	2[a]	250
Donald N. Sharp Memorial Community Hospital [1-3]	San Diego, Calif.	H. R. Irwin	133	131,598	8,319	5,808	1	2	4[p]	175
Mercy Hospital [1-3]	San Diego, Calif.	D. A. DeSanto	271	176,026	14,805	13,520	1	4	4[p]	225
San Diego County General Hospital [1]	San Diego, Calif.	L. A. Palmer	259	130,809	1,855	1,522	1	4	4[p]	250
French Hospital [1]	San Francisco	G. Watson	93	90,896	3,173	4,179	1	1	1[a]	250
Kaiser Foundation Hospital [1-3]	San Francisco	M. L. Bassis	231	258,296	7,413	5,713	3	3	3[a]	200
Mount Zion Hospital [1-3]	San Francisco	G. R. Biskind	238	159,686	4,679	4,205	1	4	4[p]	150
St. Francis Memorial Hospital [1-3]	San Francisco	J. L. Zundell	126	87,748	5,852	4,141	1	1	4[p]	300
St. Luke's Hospital [1-3]	San Francisco	M. B. Black	139	122,882	4,090	2,813	1	2	2[p]	325
St. Mary's Hospital [1-3]	San Francisco	A. Moody	152	179,145	6,448	5,337	1	4	4[p]	200
San Francisco Hospital										
Stanford University Service [1]	San Francisco	A. J. Cox, Jr.	255	47,000	.....	.....	..	..	3[a]	220
University of California Service [1]	San Francisco	J. L. Carr	401	47,000	1,777	1,777	3	6	3[a]	220
University of California Hospitals [1-107]	San Francisco	H. D. Moon	291	140,038	7,326	6,779	7	17	4[p]	231
Veterans Admin. Hospital [1-3]	San Francisco	O. N. Rambo, T. V. Feichtmeir	190	183,844	2,870	2,870	3	6	3[p]	271
O'Connor Hospital [1-3]	San Jose, Calif.	L. R. Grams	173	214,063	6,491	4,694	1	3	4[p]	350
Santa Clara County Hospital [1-3]	San Jose, Calif.	D. L. Alcott	368	324,080	2,238	2,238	1	4	4[p]	200
Community Hospital of San Mateo County [1]	San Mateo, Calif	R. O. Holmes	239	92,676	2,097	1,432	1	1	2[a]	300
Brookside Hospital [1]	San Pablo, Calif.	G. H. DeMay, C. Rolle	125	90,000	3,900	3,600	2	2	2[p]	500
Santa Barbara Cottage Hospital [1-3]	Santa Barbara, Calif.	E. L. Benjamin	102	104,653	4,838	4,164	2	2	2[a]	200
St. John's Hospital [1]	Santa Monica, Calif.	G. J. Hummer	170	197,981	11,762	9,416	4	4	2[a]	225
San Joaquin General Hospital [1]	*Stockton, Calif.*	*H. J. Schneider*	*433*	*148,299*	2,722	2,241	1	1	2[a]	260
Harbor General Hospital [1]	Torrance, Calif.	B. E. Ketcham	510	351,531	3,638	3,408	2	8	4[p]	259
Gorgas Hospital [1]	Ancon, Canal Zone	H. Mondragon	231	123,297	2,978	2,978	1	4	4[p]	390
Penrose Hospital [1-3]	Colorado Springs, Colo.	M. Berthrong	134	96,325	3,703	2,815	1	2	2[a]	200
Children's Hospital [1-3]	Denver	E. C. Beatty, Jr.	110	145,810	3,657	724	1	2	2[p]	200
General Rose Memorial Hospital [1-3]	Denver	K. Neubuerger, S. Kurland	157	132,978	5,722	4,587	1	2	2[a]	265
Mercy Hospital [1-3]	Denver	E. Hildebrand	120	72,339	5,536	5,216	2	2	2[p]	250
Porter Sanitarium and Hospital	Denver	W. T. Wikle, J. M. Wood	94	104,855	6,063	6,004	1	2	2[p]	250
Presbyterian Hospital [1-3]	Denver	A. E. *Lubchenco*	*198*	*103,035*	*9,760*	*8,159*	1	4	4[p]	275
St. Anthony Hospital [1-3]	Denver	S. K. Kurland	176	115,875	5,252	2,694	1	2	2[a]	275
St. Joseph's Hospital [1-3]	Denver	S. M. P. Ashe	224	277,174	9,981	8,516	1	4	4[p]	200
St. Luke's Hospital [1]	Denver	W. C. Black	254	189,631	12,141	9,300	2	6	4[p]	225
University of Colorado Medical Center										
Colorado General Hospital [1-3-121]	Denver	J. B. McNaught, J. H. Holmes	444	272,454	8,390	8,314	4	16	4[p]	250
Denver General Hospital [1-3]	Denver	W. C. White	502	418,327	3,389	3,389	..	..	4[p]	245
Veterans Admin. Hospital [1-3]	Denver	E. H. Valentine	299	203,993	2,489	2,400	..	3	4[p]	254
Colorado State Hospital [1-3]	Pueblo, Colo.	M. Gallavan	363	109,811	7,969	4,870	4	10	4[p]	415
Bridgeport Hospital [1-3]	Bridgeport, Conn.	I. Akerson	211	253,863	5,039	4,276	1	4	4[p]	240
St. Vincent's Hospital [1-3]	Bridgeport, Conn.	A. M. Ginzler	222	202,483	4,895	4,171	1	1	4[p]	300
Danbury Hospital [1-3]	Danbury, Conn.	E. Woll	104	89,510	3,117	2,139	3	3	1[a]	200
Griffen Hospital [1-3]	Derby, Conn.		.....	....	.....	.....	..	..	1[a]	...
Greenwich Hospital [1-3]	Greenwich, Conn.	J. Morris	160	102,713	4,611	3,835	1	2	2[p]	150
Hartford Hospital [1-3]	Hartford, Conn.	R. E. Kendall	803	384,011	12,703	12,067	2	8	4[p]	125
St. Francis Hospital [1-3]	Hartford, Conn.	L. P. Hastings	293	260,274	6,679	5,911	1	4	4[p]	175
Meriden Hospital [1-3]	Meriden, Conn.	R. Katzenstein	108	129,919	3,106	2,769	2	2	2[a]	100
Middlesex Memorial	Conn.	C. E. McLeod	206	101,730	3,714	2,754	2	4	2[p]	200
New Britain General	Conn.	P. D. Rosahn	242	248,913	7,051	5,450	1	4	4[p]	210
Yale-New Haven Medical Center										
Grace-New Haven Community Hospital [1-3]	New Haven, Conn.	A. A. Liebow	732	250,029	8,873	8,873	2	3	4[p]	50
Veterans Admin. Hospital [1-3]	West Haven, Conn.	R. Yesner	184	201,629	3,150	2,897	1	3	4[p]	254
Hospital of St. Raphael [3]	New Haven, Conn.	R. Nesbit	303	156,601	7,260	6,565	1	4	4[p]	150
Veterans Admin. Hospital [1-3]	Newington, Conn.	R. G. Olivetti	103	132,754	1,133	1,079	1	1	1[a]	270
Norwalk Hospital [1-3]	Norwalk, Conn.	R. N. Barnett	228	22,435	4,560	3,173	2	2	4[p]	195
Stamford Hospital [1-3]	Stamford, Conn.	E. S. Breakell	268	161,945	6,179	2,657	1	4	4[p]	150
St. Mary's Hospital [1-3]	Waterbury, Conn.	M. E. Cox	163	169,587	16,538	15,620	1	3	4[p]	225
Waterbury Hospital [1-3]	Waterbury, Conn.	J. O. Collins	219	180,786	4,714	4,714	1	4	4[p]	225
Delaware Hospital [1-3]	Wilmington, Del.	J. W. Howard	286	298,650	5,680	5,541	1	4	4[p]	220
Memorial Hospital [1-3]	Wilmington, Del.	J. W. Abbiss	287	139,808	6,135	6,135	1	4	4[p]	225
Wilmington General Hospital [1-3]	*Wilmington, Del.*	J. V. *Casella*	94	*119,361*	2,326	2,326	1	1	1[p]	260
Children's Hospital [1-3]	Washington, D. C.	E. C. Rice	136	163,365	683	683	2	2	2[p]	200
District of Columbia General Hospital [1-3]	Washington, D. C.	D. Weiss	904	365,224	5,188	5,188	2	7	4[p]	233
Doctors Hospital [1-3]	Washington, D. C.	O. B. Hunter, Jr.	151	194,900	6,293	5,709	1	4	4[p]	200
Georgetown University Hospital [1-3]	Washington, D. C.	C. F. Geschickter	480	420,000	5,387	5,387	6	14	4[p]	175
George Washington University Hospital [1-3]	Washington, D. C.	T. M. Peery	319	248,448	7,846	7,646	2	8	4[p]	150
Providence Hospital [3]	Washington, D. C.	K. McCoy	239	243,929	8,123	7,962	1	4	4[p]	350
Sibley Memorial Hospital [1-3]	Washington, D. C.	O. B. Hunter	163	159,174	5,188	4,810	1	2	4[p]	200
Veterans Admin. Hospital [1-3-140]	Washington, D. C.	J. S. Howe	245	187,787	1,971	1,971	2	5	4[p]	270
Washington Hospital Center [1-3]	Washington, D. C.	V. Martens	247	170,856	4,969	4,861	2	6	4[p]	215
Veterans Admin. Hospital [1-3]	Coral Gables, Fla.	R. V. Thomson	423	228,765	1,819	1,819	1	6	4[p]	250
North Broward General Hospital	Ft. Lauderdale, Fla.		.....	....	.....	.....	..	..	4[p]	...
Baptist Memorial Hospital [1-3]	Jacksonville, Fla.	A. G. Foraker	120	103,182	4,483	3,955	1	4	4[p]	325
Duval Medical Center [1-3]	Jacksonville, Fla.	J. W. Eversole	221	165,013	3,796	3,436	1	2	2[a]	200
St. Vincent's Hospital [1-3]	Jacksonville, Fla.	C. M. Whorton	183	167,287	4,751	3,487	1	4	4[p]	325

Numerical and other references will be found on pages *788* through *790*.

16. PATHOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of Autopsies	Total Number of Laboratory Examinations	Number of Surgical Specimens	Number Examined Microscopically	First Year Residencies Offered	Total Residencies Offered	Length of Approved Program (Years)	Beginning Stipend (Month)
Jackson Memorial Hospital [1-3]	Miami, Fla.	W. A. D. Anderson	816	651,083	13,959	12,258	5	20	4^p	200
Mount Sinai Hospital of Greater Miami [1-3]	Miami Beach, Fla.	J. Benson	191	173,370	2,909	2,631	1	4	3^a	250
Orange Memorial Hospital [1]	Orlando, Fla.	C. G. Butt	250	192,880	5,551	4,822	1	3	3^a	325
Baptist Hospital [1-3]	Pensacola, Fla.	....	75	110,859	4,430	4,130	1	2	4^p	...
Crawford W. Long Memorial Hospital [1-3]	Atlanta, Ga.	D. Ayer	181	96,721	7,128	5,685	3	7	4^p	285
Georgia Baptist Hospital [1-3]	Atlanta, Ga.	G. L. Forbes	214	169,961	9,574	7,714	1	2	2^p	305
Grady Memorial Hospital [1]	Atlanta, Ga.	T. Rauen	481	320,396	6,388	6,388	5	10	4^p	100
St. Joseph's Infirmary [1-3]	Atlanta, Ga.	J. T. Godwin	175	137,763	7,804	7,804	1	4	4^p	270
Veterans Admin. Hospital [1]	Atlanta, Ga.	J. Mendeloff	180	180,161	2,254	2,254	1	2	3^p	271
Eugene Talmadge Memorial Hospital [1]	Augusta, Ga.	....	.....	....	.....	.....	..	..	4^p	...
University Hospital [1-3]	Augusta, Ga.	M. Ihnen	196	164,000	6,203	5,002	1	2	3^a	200
Emory University Hospital [1-3]	Emory University, Ga.	W. H. Sheldon	259	171,500	7,628	7,573	2	5	4^p	235
Memorial Hospital of Chatham County [1-3]	Savannah, Ga.	L. Howard, Jr.	209	69,553	3,912	1,578	1	1	1^a	350
Queen's Hospital [1-3]	Honolulu, Hawaii	H. Civin	223	161,480	7,178	6,385	2	6	4^p	150
St. Francis Hospital [1-3]	Honolulu, Hawaii	R. Chappel	136	163,592	10,215	6,204	1	2	2^a	250
Alexian Brothers Hospital [3]	Chicago	G. F. Stevenson	133	88,716	1,703	1,056	1	2	1^a	250
American Hospital [1-3]	Chicago	W. F. Eisenstaedt, F. J. Bicknell	101	62,652	1,816	1,738	2	2	1^p	65
Augustana Hospital [1-3]	Chicago	G. Milles	149	101,430	3,340	2,699	2	2	4^p	200
Children's Memorial Hospital [1-3]	Chicago	J. Boggs	136	112,725	1,060	1,060	2	2	1^p	75
Cook County Hospital	Chicago	P. B. Szanto	2,010	....	13,508	9,500	6	12	4^p	...
Edgewater Hospital	Chicago	L. G. Gamboa	159	121,162	6,295	5,522	1	2	2^p	250
Englewood Hospital [3]	Chicago	G. T. Rich	76	66,338	1,688	1,578	1	1	1^a	200
Grant Hospital [1-3]	Chicago	J. C. Sherrick	182	106,142	3,141	3,467	1	3	3^p	225
Illinois Masonic Hospital [1-3]	Chicago	L. S. King	236	214,328	3,286	2,990	1	1	4^p	115
Mercy Hospital [1-3]	Chicago	G. W. Changus	161	123,034	4,249	3,526	1	4	4^p	225
Michael Reese Hospital [1-3]	Chicago	O. Saphir	557	598,758	10,319	8,455	3	9	4^p	150
Mount Sinai Hospital [1-3]	Chicago	I. Davidsohn, L. Krainer	263	424,607	6,997	6,526	2	8	4^p	225
Northwestern University Medical Center										
Chicago Wesley Memorial Hospital [1-3]	Chicago	T. C. Laipply	293	298,896	6,537	6,537	2	5	4^p	125
Passavant Memorial Hospital [1-3]	Chicago	W. R. Wartman, M. C. Wheelock	152	160,941	3,200	3,200	1	4	4^p	125
Veterans Admin. Research Hospital [1-3]	Chicago	W. B. Wartman	201	231,283	1,924	1,924	1	4	4^p	271
Evanston Hospital [1-3]	Evanston, Ill.	H. A. Teloh	278	232,189	4,255	4,255	1	3	4^p	225
Norwegian American Hospital	Chicago	A. Learner	79	87,471	3,333	1,924	1	1	1^a	225
Presbyterian-St. Luke's Hospital [1-3-411]	Chicago	G. M. Hass	260	63,292	6,039	6,039	4	10	4^p	125
Ravenswood Hospital [1-3]	Chicago	P. Graff	179	138,594	2,598	2,282	1	1	1^a	200
St. Anne's Hospital [1-3]	Chicago	J. B. Hartney	181	195,796	4,567	2,825	1	4	4^p	250
St. Joseph Hospital [1-3]	Chicago	G. F. Stevenson	100	103,731	3,662	3,248	1	4	2^p	300
St. Mary of Nazareth Hospital [1-3]	Chicago	M. C. Godwin	120	286,027	4,568	3,794	1	1	1^a	225
Swedish Covenant Hospital [1-3]	Chicago		.....	....	.....	.....	..	..	4^p	...
University of Chicago Clinics [1-3]	Chicago	R. W. Wissler	527	466,612	5,807	5,613	2	8	4^p	200
University of Illinois Research and Educational Hospitals [1-3]	Chicago	C. A. Krakower	453	646,279	11,028	11,028	4	10	4^p	200
Veterans Admin. West Side Hospital [1-3]	Chicago	B. Chomet	239	308,516	2,280	2,180	2	4	4^p	270
St. Francis Hospital [1-3]	Evanston, Ill.	J. W. Henry	302	275,618	6,333	5,536	1	4	4^p	260
Veterans Admin. Hospital [1-3-161]	Hines, Ill.	M. Rubnitz	625	619,936	3,878	3,693	2	8	4^p	270
Methodist Hospital of Central Illinois [3]	Peoria, Ill.	H. I. Brown	179	104,618	5,261	3,973	1	3	4^p	200
St. Francis Hospital [1-3]	Peoria, Ill.	J. R. Craft, E. P. Elzi	314	164,462	7,178	5,233	1	4	4^p	225
Rockford Memorial Hospital [1-3]	Rockford, Ill.	M. O. Alexander	193	187,712	3,801	3,153	1	4	4^p	225
St. Anthony Hospital [1-3]	Rockford, Ill.	A. R. K. Matthews	111	103,663	4,897	4,050	1	4	4^p	200
Carle Memorial Hospital [1-3]	Urbana, Ill.	H. P. Friedman	60	132,000	2,777	2,544	1	2	1^a	250
St. Joseph's Hospital [1-3]	Fort Wayne, Ind.	L. A. Schneider	220	165,744	7,546	6,193	2	4	4^p	250
Methodist Hospital [1]	Gary, Ind.	R. A. Burger, W. Loh	268	129,149	4,083	3,923	1	4	4^p	300
Indiana University Medical Center										
Indiana University Medical Center Hospital [1]	Indianapolis	E. B. Smith	383	332,324	10,818	10,278	4	12	4^p	225
Veterans Admin. Hospital [1-3]	Indianapolis	D. Rosenbaum	334	189,407	1,191	1,191	..	..	3^p	271
Marion County General Hospital [1-3]	Indianapolis	P. V. Evans	418	181,601	2,715	2,715	1	4	4^p	210
Methodist Hospital [1]	Indianapolis	L. H. Hoyt	292	670,885	13,417	8,879	2	5	4^p	278
St. Vincent's Hospital [1-3]	Indianapolis	L. N. Foster	142	219,287	5,564	3,752	1	4	4^p	275
St. Elizabeth Hospital [1]	Lafayette, Ind.	G. B. Stansell	145	140,520	3,503	3,503	1	2	2^a	275
Ball Memorial Hospital [1]	Muncie, Ind.	L. G. Montgomery	190	264,266	6,340	4,468	1	4	4^p	250
South Bend Medical Foundation [1]	South Bend, Ind.	C. S. Culbertson	448	343,783	15,040	10,439	2	8	4^p	325
Elkhart General Hospital	Elkhart, Ind.		.....	....	.....	.....	..	..	..	...
St. Joseph Hospital	Mishawaka, Ind.		.....	....	.....	.....	..	..	..	...
Memorial Hospital	South Bend, Ind.		.....	....	.....	.....	..	..	..	...
St. Joseph Hospital	South Bend, Ind.		.....	....	.....	.....	..	..	..	...
Good Samaritan Hospital	Vincennes, Ind.		...	....	.....	.....	..	..	1^a	...
St. Luke's Methodist Hospital [1-3]	Cedar Rapids, Iowa	R. F. Looker	307	203,616	5,155	3,481	1	4	3^p	300
Iowa Methodist Hospital [1-3]	Des Moines, Iowa	J. W. Green, Jr.	217	218,777	5,355	4,492	1	2	4^p	200
Mercy Hospital [1-3]	Des Moines, Iowa	F. C. Coleman	208	175,309	4,602	4,602	1	4	4^p	325
Veterans Admin. Hospital [1-3]	Des Moines, Iowa	T. E. Corcoran	183	171,662	2,358	2,358	1	4	4^p	271
Mercy Hospital [1-3]	Iowa City	K. Cross	60	6,311	8,022	722	1	1	1^p	200
State University of Iowa Hospitals [1-3]	Iowa City	E. D. Warner	515	363,160	6,660	6,660	2	8	3^a	250
Veterans Admin. Hospital [1-3]	Iowa City	K. R. Cross	238	172,643	2,115	1,987	2	8	4^p	270
Halstead Hospital [1]	Halstead, Kan.	C. A. Helwig	44	2,571	2,314	2,055	1	1	1^p	250
University of Kansas Medical Center [1-3]	Kansas City, Kan.	R. Stowell	415	568,952	10,274	8,778	7	20	4^p	125
Veterans Admin. Hospital [1-3]	Kansas City, Mo.	J. A. Turner	239	226,509	2,987	2,887	..	..	...	271
St. Francis Hospital [1-3]	Wichita, Kan.	W. P. Callahan, Jr.	297	487,538	9,195	8,876	2	5	3^a	...
Wesley Hospital [1-3]	Wichita, Kan.	B. Stofer	193	144,042	6,502	4,672	1	4	4^p	295
Wichita-St. Joseph Hospital [1-3]	Wichita, Kan.	W. J. Reals	142	148,463	8,123	7,879	1	2	2^p	300
St. Elizabeth Hospital [1-3]	Covington, Ky.	R. J. Ritterhoff	191	103,168	3,546	2,513	1	2	2^a	225
Children's Hospital	Louisville, Ky.	I. Diamond	130	35,585	1,132	742	1	2	1^p	125
Louisville General Hospital [1-3]	Louisville, Ky.	W. Christopherson	503	262,266	3,696	3,406	2	8	3^a	157
SS. Mary and Elizabeth Hospital [1-3]	Louisville, Ky.	H. Gordon	85	84,007	3,919	2,763	2	2	2^a	350
Veterans Admin. Hospital [1-3]	Louisville, Ky.	E. L. Foote	189	138,704	1,917	1,915	..	2	4^p	270
Charity Hospital of Louisiana [1]	New Orleans	E. Moss, R. L. Holman, C. E. Dunlap	2,198	1,077,667	18,612	18,612	5	15	4^p	100
Hotel Dieu-Sisters Hospital [1-3]	New Orleans	R. H. Hartwell	97	207,359	7,842	7,842	2	4	3^p	225
Ochsner Foundation Hospital [1-3]	New Orleans	G. M. Carrera	152	169,415	5,460	5,460	1	4	4^p	225

Numerical and other references will be found on pages 788 through 790.

16. PATHOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of Autopsies	Total Number of Laboratory Examinations	Number of Surgical Specimens	Number Examined Microscopically	First Year Residencies Offered *	Total Residencies Offered *	Length of Approved Program (Years)	Beginning Stipend (Month)
Southern Baptist Hospital $^{1-3}$	New Orleans	E. H. Lawson	150	454,803	12,846	14,242	1	4	4^{p}	225
Touro Infirmary ^{1}	New Orleans	A. Hertzog	260	278,331	7,286	6,922	1	3	4^{p}	125
Veterans Admin. Hospital $^{1-3}$	New Orleans	J. Ziskind	319	198,913	2,347	2,337	1	3	3^{p}	271
Confederate Memorial Medical Center $^{1-3}$	Shreveport, La.	W. R. Mathews	286	316,603	5,476	5,476	1	4	4^{p}	125
Eastern Maine General Hospital $^{1-3}$	Bangor, Maine	R. C. Wadsworth	155	155,443	7,816	7,008	1	2	3^{a}	125
Central Maine General Hospital ^{1}	Lewistown, Maine	C. F. Branch	226	94,459	5,115	5,115	1	1	4^{p}	225
Maine Medical Center $^{1-3}$	Portland, Maine	J. E. Porter	178	142,309	4,851	3,583	1	4	4^{p}	125
Baltimore City Hospitals $^{1-3}$	Baltimore	A. D. Pollack	479	165,829	2,958	2,958	2	5	3^{p}	75
Franklin Square Hospital $^{1-3}$	Baltimore	P. F. Guerin	143	138,175	2,547	2,534	..	2	2^{a}	225
Johns Hopkins Hospital $^{1-3}$	Baltimore	I. L. Bennett, Jr.	684	244,755	6,198	6,198	6	12	3^{a}	25
Lutheran Hospital $^{1-3-43}$	Baltimore	J. A. Wagner	120	141,708	3,000	3,000	1	1	1^{a}	250
Maryland General Hospital $^{1-3}$	Baltimore	R. S. Fisher	171	181,066	4,990	4,984	1	3	3^{a}	225
Mercy Hospital $^{1-3}$	Baltimore	C. G. Warner	184	497,453	5,597	3,794	1	2	2^{a}	275
Provident Hospital and Free Dispensary $^{1-3}$	Baltimore	H. Len Tseng	91	111,262	1,111	1,101	1	1	1^{a}	...
Sinai Hospital $^{1-3}$	Baltimore	T. Weinberg	184	340,868	11,767	11,767	2	6	4^{p}	110
Union Memorial Hospital $^{1-3}$	Baltimore	W. C. Merkel	211	164,882	8,525	8,338	1	4	4^{p}	215
University Hospital ^{1}	Baltimore	....	.....	....	.....	.....	..	..	4^{p}	...
Suburban Hospital $^{1-3}$	Bethesda, Md.	J. E. Ash	153	....	.....	.....	1	3	3^{p}	325
Prince George's General Hospital $^{1-3}$	Cheverly, Md.	J. C. Burns	212	99,028	3,376	3,376	1	2	2^{p}	200
Beverly Hospital $^{1-3}$	Beverly, Mass.	R. Fienberg	132	94,519	1,862	1,862	2	2	3^{p}	225
Beth Israel Hospital $^{1-3}$	Boston	D. G. Freiman	232	232,539	4,769	4,665	2	5	3^{a}	167
Boston City Hospital ^{1}	Boston	G. K. Mallory	1,188	59,999	7,299	7,299	5	17	4^{p}	132
Boston Lying-in Hospital $^{1-3-30}$—Free Hospital For Women $^{1-3}$	Boston	K. Benirschke, D. G. McKay	211	82,777	10,235	10,231	1	.2	1^{a}	75
Carney Hospital ^{3}	Boston	H. J. Christian	162	194,565	5,633	4,980	2	2	2^{a}	175
Children's Medical Center $^{1-3}$	Boston	S. Farber	342	342	2,216	2,216	2	5	2^{p}	42
Faulkner Hospital $^{1-3}$	Boston	P. M. Le Compte	85	66,000	3,032	3,729	1	1	1^{a}	150
Lemuel Shattuck Hospital $^{1-3}$	Boston	G. W. Curtis	121	89,586	775	775	1	2	1^{a}	202
Massachusetts General Hospital $^{1-3}$	Boston	B. Castleman	1,166	12,309	12,309	12,309	..	..	4^{p}	67
Massachusetts Memorial Hospitals $^{1-3}$	Boston	S. Sommers	98	141,818	4,893	4,893	1	4	4^{p}	175
New England Center Hospital $^{1-3}$	Boston	H. E. MacMahon	183	247,483	3,445	3,357	..	4	2^{a}	100
New England Deaconess Hospital $^{1-3}$	Boston	S. Warren	195	259,124	7,579	7,579	2	10	4^{p}	200
Peter Bent Brigham Hospital $^{1-3-214}$	Boston	G. J. Dammin	379	148,804	3,207	3,207	3	8	4^{p}	42
St. Elizabeth's Hospital $^{1-3}$	Boston	J. H. Graham	186	149,085	7,602	5,648	2	2	3^{a}	125
Veterans Admin. Hospital $^{1-3}$	Boston	J. D. Houghton	451	462,566	4,447	4,422	2	6	3^{a}	271
Cambridge City Hospital $^{1-3}$	Cambridge, Mass.	C. W. Jones	161	108,491	2,132	2,132	2	2	2^{a}	160
Mount Auburn Hospital $^{1-3}$	Cambridge, Mass.	H. E. McMahon	200	146,578	3,501	3,141	1	2	2^{a}	155
Truesdale Hospital $^{1-3-307}$	Fall River, Mass.	W. Freeman	54	121,009	1,905	1,108	2	2	1^{a}	175
Burbank Hospital $^{1-3}$	Fitchburg, Mass.	H. J. Sparling, Jr.	129	126,062	2,123	2,123	2	2	2^{a}	200
Holyoke Hospital $^{1-3}$	Holyoke, Mass.	H. P. Wakefield	82	79,590	3,503	2,835	1	1	1^{a}	150
Lawrence General Hospital ^{3}	Lawrence, Mass.	L. S. Jolliffe	188	108,815	1,578	1,578	2	2	4^{p}	220
Lynn Hospital $^{1-3}$	Lynn, Mass.	H. G. Olken	143	149,205	4,296	4,296	4	4	2^{p}	150
Malden Hospital $^{1-3}$	Malden, Mass.	M. V. MacKenzie	101	69,633	2,893	2,893	1	2	2^{p}	200
St. Luke's Hospital $^{1-3}$	New Bedford, Mass.	V. Kiarsis	163	233,450	4,672	3,143	1	2	2^{a}	200
Newton-Wellesley Hospital $^{1-3}$	Newton Lower Falls, Mass.	D. Skinner	133	152,614	6,351	3,548	1	3	3^{p}	200
Pittsfield General Hospital $^{1-3}$	Pittsfield, Mass.	W. Beautyman	84	70,000	3,605	1,675	2	2	2^{p}	300
Quincy City Hospital $^{1-3}$	Quincy, Mass.	R. B. Street, Jr.	154	105,085	2,619	2,619	1	2	4^{p}	179
Salem Hospital $^{1-3}$	Salem, Mass.	D. A. Nickerson	392	117,140	9,533	6,367	1	4	4^{p}	200
Springfield Hospital ^{1}	Springfield, Mass.	W. Kaufmann	296	215,850	8,578	8,578	1	3	3^{a}	125
Pondville Hospital	Walpole, Mass.	S. Warren	153	55,610	1,723	1,723	..	2	1^{p}	527
Veterans Admin. Hospital $^{1-3}$	West Roxbury, Mass.	I. Gore	109	122,690	1,115	1,115	1	3	2^{p}	270
Memorial Hospital $^{1-3}$	Worcester, Mass.	R. C. Sniffen	180	112,733	3,557	2,996	1	1	1^{a}	200
St. Vincent Hospital $^{1-3}$	Worcester, Mass.	W. Casale	252	292,558	5,635	4,788	1	4	4^{p}	175
Worcester City Hospital $^{1-3}$	Worcester, Mass.	W. MacGillivrary	284	125,936	3,050	2,750	1	3	4^{p}	250
St. Joseph Mercy Hospital ^{1}	Ann Arbor, Mich.	H. Bryant	217	163,670	5,112	10,224	1	2	3^{a}	310
University Hospital $^{1-3-215}$	Ann Arbor, Mich.	A. J. French	496	143,539	9,915	9,915	5	20	4^{p}	160
Leila Y. Post Montgomery Hospital $^{1-3}$	Battle Creek, Mich.	A. A. Humphrey	129	70,571	1,976	1,320	1	1	1^{a}	275
Children's Hospital $^{1-3}$	Detroit	....	201	80,760	14,079	14,079	2	2	1^{a}	225
Grace Hospital $^{1-3}$	Detroit	C. I. Owen	369	327,081	16,302	16,302	1	4	4^{p}	275
Harper Hospital $^{1-3}$	Detroit	J. R. McDonald	292	245,769	6,301	6,301	2	8	4^{p}	275
Henry Ford Hospital $^{1-3}$	Detroit	R. C. Horn	651	606,020	11,743	11,743	4	16	4^{p}	225
Mount Carmel Mercy Hospital $^{1-3}$	Detroit	L. W. Gardner	333	325,531	7,171	6,980	1	4	4^{p}	275
Providence Hospital $^{1-3}$	Detroit	D. H. Kaump	235	154,135	6,866	6,065	1	4	4^{p}	275
Wayne University Affiliated Hospitals										
Oakwood Hospital $^{1-3}$	Dearborn, Mich.	R. L. Mainwaring	136	158,651	4,918	4,796	1	4	4^{p}	250
Veterans Admin. Hospital $^{1-3}$	Dearborn, Mich.	M. W. Wilson	327	382,239	2,653	2,653	2	5	4^{p}	270
Detroit Memorial Hospital $^{1-3}$	Detroit	J. D. Langston	155	199,331	4,892	.....	..	2	4^{p}	425
Herman Kiefer Hospital $^{1-3}$	Detroit	P. C. Martineau	251	650,907	1,937	1,937	2	2	1^{p}	308
Receiving Hospital $^{1-3}$	Detroit	O. A. Brines	695	634,518	8,112	7,135	10	17	4^{p}	303
Sinai Hospital $^{1-3}$	Detroit	S. D. Kobernick	167	178,556	6,107	4,700	1	4	3^{p}	300
Woman's Hospital $^{1-3}$	Detroit	E. R. Jennings	169	409,939	165	8,035	2	2	4^{p}	475
Wayne County General Hospital and Infirmary $^{1-3}$	Eloise, Mich.	S. E. Gould	473	424,148	4,554	4,518	2	8	4^{p}	385
Hurley Hospital $^{1-3}$	Flint, Mich.	E. M. Knights	365	299,653	5,465	4,684	1	4	4^{p}	325
McLaren General Hospital ^{1}	Flint, Mich.	E. G. Murphy	151	233,492	5,031	4,091	1	4	4^{p}	375
St. Joseph Hospital ^{1}	Flint, Mich.	W. L. Eaton	224	169,911	5,404	4,800	2	2	4^{p}	400
Blodgett Memorial Hospital $^{1-3}$	Grand Rapids, Mich.	C. A. Payne	304	163,451	8,922	8,379	1	3	4^{p}	300
Butterworth Hospital $^{1-3}$	Grand Rapids, Mich.	J. D. Mann	341	188,069	8,146	6,710	1	4	4^{p}	300
St. Mary's Hospital $^{1-3}$	Grand Rapids, Mich.	H. E. Bowman	174	242,823	8,683	.....	1	2	2^{a}	300
W. A. Foote Memorial Hospital	Jackson, Mich.	....	...	....	.....	.....	..	..	2^{p}	...
Borgess Hospital $^{1-3}$	Kalamazoo, Mich.	P. Rutherford	137	95,495	6,318	4,961	1	2	2^{p}	275
Edward W. Sparrow Hospital $^{1-3}$	Lansing, Mich.	J. F. Dunkel	199	164,176	5,922	5,748	1	3	3^{a}	250
Pontiac General Hospital $^{1-3}$	Pontiac, Mich.	J. J. Marra	145	142,185	4,140	3,215	1	4	4^{p}	350
St. Joseph Mercy Hospital $^{1-3}$	Pontiac, Mich.	R. E. Olsen	150	104,523	4,266	4,074	1	3	4^{p}	375
Saginaw General Hospital $^{1-3}$	Saginaw, Mich.	R. Bucklin	217	110,979	4,388	4,229	1	4	4^{p}	365
St. Luke's Hospital $^{1-3}$	Duluth, Minn.	A. H. Wells	422	218,582	9,417	8,900	1	4	4^{p}	275
St. Mary's Hospital ^{1}	Duluth, Minn.	A. C. Aufderheide	244	308,556	4,674	3,976	1	4	4^{p}	200
Minneapolis General Hospital $^{1-3}$	Minneapolis	J. I. Coe	409	485,964	3,477	2,904	1	3	3^{a}	220
Northwestern Hospital $^{1-3}$	Minneapolis	F. H. Lott	151	153,063	5,166	4,453	1	1	2^{a}	200
St. Barnabas Hospital $^{1-3}$	Minneapolis	W. Chadbourn, N. H. Lufkin	243	183,727	6,184	5,341	1	1	2^{a}	235

Numerical and other references will be found on pages 788 through 790.

16. PATHOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of Autopsies	Total Number of Laboratory Examinations	Number of Surgical Specimens	Number Examined Microscopically	First Year Residencies Offered *	Total Residencies Offered *	Length of Approved Program (Years)	Beginning Stipend (Month)
Swedish Hospital [1-3]	Minneapolis	A. R. Jay, D. P. Reynolds	272	226,103	11,237	8,487	2	2	2^a	200
University of Minnesota Hospitals [1-3]	Minneapolis	G. T. Evans	526	691,118	4,801	4,801	1	11	4^p	317
Veterans Admin. Hospital [1-3-225]	Minneapolis	D. F. Gleason	427	451,017	5,126	4,642	3	6	4^p	271
Mayo Foundation [1]	Rochester, Minn.	D. R. Mathieson, J. W. Kernohan	702	1,000,000	26,020	25,020	5	20	4^p	175
Ancker Hospital [1-3]	St. Paul	J. F. Noble	398	257,178	1,625	1,625	1	1	2^a	220
Charles T. Miller Hospital [1-3]	St. Paul	K. Ikeda	184	241,750	6,907	5,782	1	4	4^p	325
St. Joseph's Hospital [1-3]	St. Paul	E. James	140	123,726	4,484	3,837	2	2	2^a	250
Mississippi Baptist Hospital [1-3]	Jackson, Miss.	K. M. Heard	202	169,270	9,592	4,468	..	1	4^p	350
University Hospital [1-3]	Jackson, Miss.	W. V. Hare	284	268,699	5,202	5,175	3	7	4^p	250
St. Louis County Hospital [3]	Clayton, Mo.	J. P. Wyatt	314	169,750	1,306	1,133	..	..	2^a	...
University of Missouri Medical Center [1-3]	Columbia, Mo.	J. E. Flynn	106	248,805	3,576	3,576	4	11	2^p	200
Kansas City General Hospital [1-3]	Kansas City, Mo.	C. B. Wheeler	466	406,075	4,104	3,591	1	4	4^p	220
Menorah Medical Center [1-3]	Kansas City, Mo.	H. Cohen	145	160,273	6,911	3,421	1	4	4^p	300
Research Hospital [1-3]	Kansas City, Mo.	H. K. B. Allebach	169	248,755	5,215	4,095	1	4	4^p	275
St. Joseph Hospital [1-3]	Kansas City, Mo	R. W. Kerr	177	301,500	6,540	6,200	1	4	4^p	250
St. Luke's Hospital [1-3]	Kansas City, Mo.	F. C. Helwig	300	316,662	18,464	16,618	2	6	4^p	310
St. Mary's Hospital [1-3]	Kansas City, Mo.	A. Lapi	193	201,913	600,712	400,826	1	4	4^p	250
Barnes Hospital [1-3]	St. Louis	W. S. Hartroft	525	560,282	16,927	11,849	1	12	3^a	50
De Paul Hospital [1-3]	St. Louis	J. D. Bauer	165	198,452	.....	3,459	1	5	4^p	200
Homer G. Phillips Hospital [1-3]	St. Louis	J. O. Blache	498	237,476	3,717	3,540	2	4	2^a	235
Jewish Hospital [1-3]	St. Louis	J. Hasson	199	206,129	5,088	4,838	1	4	3^a	150
Missouri Baptist Hospital [1-3]	St. Louis	W. R. Platt	141	120,356	3,868	2,968	1	3	4^p	175
St. John's Hospital [1-3]	St. Louis	H. N. Allen	192	130,627	4,829	3,607	1	2	2^p	200
St. Louis City Hospital [1-3]	St. Louis	D. Johnson	566	302,166	4,102	3,689	4	14	4^p	234
St. Luke's Hospital [1-3]	St. Louis	R. W. Ogilvie	203	182,205	5,340	4,690	..	1	2^a	250
St. Mary's Group of Hospitals [1-3]	St. Louis	H. Pinkerton	435	721,775	8,290	7,511	3	11	4^p	200
Veterans Admin. Hospital [1-3]	St. Louis	R. F. Schaefer	277	177,118	3,500	3,500	2	2	1^a	271
Lincoln General Hospital [1-3]	Lincoln, Neb.	F. Tanner	102	94,419	4,564	4,255	1	1	1^a	350
Bishop Clarkson Memorial Hospital [1-3]	Omaha, Neb.	M. Foster	175	206,357	7,695	5,544	1	4	3^p	325
Creighton Memorial—St. Joseph's Hospital [1-3]	Omaha, Neb.	V. Moragues	161	273,416	9,007	5,867	3	9	4^p	210
Immanuel Hospital [1]	Omaha, Neb.	....	...	......	....	....	..	..	1^a	...
Nebraska Methodist Hospital [1-3]	Omaha, Neb.	J. R. Schenken	250	107,783	....	6,840	1	6	4^p	300
University of Nebraska Hospital [1-3]	Omaha, Neb.	J. R. Schenken	126	126,147	2,075	2,075	1	4	4^p	200
Veterans Admin. Hospital [1-3]	Omaha, Neb.	G. J. Haslam	161	151,988	1,709	1,436	1	3	3^a	270
Mary Hitchcock Memorial Hospital [1-3]	Hanover, N. H.	R. E. Miller	221	172,243	3,812	3,429	1	4	4^p	218
Atlantic City Hospital [1-3]	Atlantic City, N. J.	M. Ackerman	252	102,095	3,419	3,419	2	2	2^a	200
Cooper Hospital [1-3]	Camden, N. J.	W. T. Read, Jr.	326	102,970	6,838	6,783	1	1	2^p	200
Our Lady of Lourdes Hospital [1-3]	Camden, N. J.	R. L. Breckenridge	180	165,099	3,620	2,588	1	2	2^p	250
West Jersey Hospital [1-3]	Camden, N. J.	E. E. Ziegler	101	115,565	5,691	2,937	1	3	3^a	225
East Orange General Hospital [3]	East Orange, N. J.	....	...	....	.....	.....	..	..	1^p	...
Veterans Admin. Hospital [1-3-225]	East Orange, N. J.	O. Auerbach	328	254,093	2,641	2,641	1	1	3^a	270
Englewood Hospital [1]	Englewood, N. J.	I. Gaspar	134	197,622	7,331	6,009	1	1	1^a	200
Hunterdon Medical Center [1-3]	Flemington, N. J.	E. V. Olmstead	110	70,933	1,462	1,462	1	1	1^a	200
Hackensack Hospital [1-3]	Hackensack, N. J.	D. E. Brown	184	172,386	4,703	4,628	1	4	4^p	150
St. Mary's Hospital [1-3]	Hoboken, N. J.	A. Ehrlich	161	67,059	3,072	2,604	..	..	2^a	150
Christ Hospital [1-3]	Jersey City, N. J.	A. Gitlitz	122	126,409	7,871	6,867	1	2	2^p	200
Jersey City Medical Center [1-3]	Jersey City, N. J.	A. N. Gnassi	460	311,966	6,687	6,687	2	3	2^a	146
Monmouth Medical Center [1-3]	Long Branch, N. J.	M. Rush	251	146,251	3,684	3,147	1	2	2^a	200
Mountainside Hospital [1-3]	Montclair, N. J.	J. L. Work	170	183,452	5,016	4,773	2	3	3^p	250
Morristown Memorial Hospital [1-3]	Morristown, N. J.	H. F. Luddecke	211	204,552	5,322	5,322	1	3	4^p	225
Burlington County Hospital [1-3]	Mount Holly, N. J	J. T. Bauer	142	82,588	1,790	1,790	..	2	2^a	100
Fitkin Memorial Hospital [1-3]	Neptune, N. J.	R. E. Conover	142	162,979	2,599	2,599	1	2	2^a	250
Martland Medical Center [1-3]	Newark, N. J.	E. Albano	404	283,103	2,278	2,278	2	6	3^a	160
Newark Beth Israel Hospital [1-3]	Newark, N. J.	L. Goldman, M. Kannerstein	230	99,255	6,029	6,029	1	4	4^p	100
Presbyterian Hospital [1-3]	Newark, N. J.	S. A. Goldberg	130	162,768	6,645	4,886	..	2	3^p	175
St. Barnabas Medical Center [1-3]	Newark, N. J.	W. G. Bernhard	87	87,380	3,339	3,164	1	3	3^p	150
St. Michael's Hospital [1-3]	Newark, N. J.	S. J. Rose	183	150,903	7,241	7,241	2	4	4^p	165
Middlesex General Hospital [1-3]	New Brunswick, N. J.	S. E. Mosltan	141	72,062	2,680	2,122	2	2	2^p	250
St. Peter's General Hospital [1-3]	New Brunswick, N. J.	W. Jarrett	135	68,804	4,210	2,108	1	2	2^a	175
Orange Memorial Hospital [1-3]	Orange, N. J.	A. R. Abel	218	112,796	3,552	3,552	1	4	4^p	150
Bergen Pines County Hospital [1-3]	Paramus, N. J.	V. H. Gillson	394	133,285	673	673	1	2	2^a	200
Passaic General Hospital [1-3]	Passaic, N. J.	J. R. Gannon	155	95,909	2,928	2,846	1	2	3^p	250
St. Mary's Hospital [1-3]	Passaic, N. J.	R. Brill	112	74,859	3,633	3,555	1	3	2^p	200
Nathan and Miriam Barnert Memorial Hospital [1-3]	Paterson, N. J.	J. Churg	97	105,057	4,095	3,516	1	1	1^a	250
Paterson General Hospital [1-3]	Paterson, N. J.	A. H. Davis	196	77,853	5,396	4,829	1	2	2^p	150
St. Joseph Hospital [1-3]	Paterson, N. J.	G. B. Kim	222	209,823	5,224	5,224	2	2	4^p	200
Perth Amboy General Hospital [3]	Perth Amboy, N. J.	H. Y. Tyler	138	165,237	3,759	3,759	1	1	1^a	200
Overlook Hospital [1-3]	Summit, N. J.	G. L. Erdman	168	141,733	4,145	3,559	1	2	2^p	200
Mercer Hospital [1-3]	Trenton, N. J.	T. K. Rathmell	156	132,762	2,659	2,659	..	2	3^a	250
St. Francis Hospital [1-3]	Trenton, N. J.	S. Weintraub	306	228,404	13,130	10,806	1	2	2^a	210
Bataan Memorial Methodist Hospital—Veterans Admin. Hospital [1-3]	Albuquerque, N. Mex.	T. Chiffelle, W. Hentel	269	223,923	4,469	3,978	4	11	2^a	250-271
Bernalillo County-Indian Hospital [1-3]	Albuquerque, N. Mex.	N. E. Pond, H. V. Beighley	185	140,391	2,089	1,686	1	4	4^p	...
Albany Hospital [1-3]	Albany, N. Y.	A. W. Wright	559	100,218	7,995	7,995	2	6	4^p	200
Bender Laboratory Hospitals [1-3]	Albany, N. Y.	J. J. Clemmer	403	452,098	8,060	8,060	2	6	4^p	250
A. N. Brady Maternity Home		....	...	....	.....	.....	..	..	..	...
Memorial Hospital		....	...	....	.....	.....	..	..	..	...
St. Peter's Hospital		....	...	....	.....	.....	..	..	..	...
Veterans Admin. Hospital [1]	Albany, N. Y.	T. S. Beecher	312	221,042	2,294	2,290	1	2	3^p	271
Binghamton City Hospital [1-3]	Binghamton, N. Y.	F. P. Becker	213	140,647	3,494	3,145	1	4	4^p	200
Lawrence Hospital [1-3]	Bronxville, N. Y.	A. A. Eggston	98	82,112	2,231	1,546	1	1	1^p	225
Beth El Hospital [1-3]	Brooklyn, N. Y.	D. M. Spain	136	400,481	5,823	5,733	1	2	1^p	150
Brooklyn Hospital [1-3]	Brooklyn, N. Y.	J. A. De Veer	169	113,023	4,303	4,000	1	3	4^p	175
Coney Island Hospital [1-3]	Brooklyn, N. Y.	H. Fink	275	197,562	1,521	1,521	4	7	4^p	145

Numerical and other references will be found on pages 788 through 790.

16. PATHOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of Autopsies	Total Number of Laboratory Examinations	Number of Surgical Specimens	Number Examined Microscopically	First Year Residencies Offered ^{8}	Total Residencies Offered ^{9}	Length of Approved Program (Years)	Beginning Stipend (Month)
Cumberland Hospital $^{1-3}$	Brooklyn, N. Y.	S. H. Polayes	144	294,252	2,047	1,913	1	3	3^{p}	145
Greenpoint Hospital $^{1-3}$	*Brooklyn, N. Y.*	*R. Aronoff*	*107*	*107,943*	*1,103*	*1,092*	1	3	3^{p}	145
Jewish Chronic Disease Hospital $^{1-3}$	Brooklyn, N. Y.	B. W. Volk	108	336,137	695	670	..	..	2^{c}	...
Jewish Hospital $^{1-3}$	Brooklyn, N. Y.	D. Grayzel	212	450,000	6,648	5,821	2	5	4^{p}	100
Kings County Hospital Center $^{1-3}$	Brooklyn, N. Y.	P. J. Fitzgerald	1,201	724,214	10,629	10,629	5	20	4^{p}	145
Long Island College Hospital $^{1-3}$	Brooklyn, N. Y.	T. G. Morrione	198	187,690	5,162	4,644	1	4	4^{p}	175
Lutheran Medical Center $^{1-3}$	Brooklyn, N. Y.	E. S. Wedding	103	159,000	2,107	2,107	2	2	1^{a}	185
Maimonides Hospital $^{1-3}$	Brooklyn, N. Y.	A. R. Kantrowitz	242	385,641	6,191	6,191	3	6	4^{p}	75
Methodist Hospital $^{1-3}$	Brooklyn, N. Y.	B. S. Herr, Jr.	128	130,425	3,807	3,807	1	3	3^{p}	175
St. Catherine's Hospital $^{1-3}$	Brooklyn, N. Y.	M. Wachstein	119	100,195	2,053	2,053	1	3	3^{a}	125
St. John's Episcopal Hospital $^{1-3}$	Brooklyn, N. Y.	L. M. Fox	72	117,345	4,694	4,000	1	2	2^{p}	175
St. Mary's Hospital $^{1-3}$	Brooklyn, N. Y.	W. Moitrier	71	133,208	4,336	4,336	1	2	2^{p}	200
Veterans Admin. Hospital $^{1-3}$	Brooklyn, N. Y.	M. Bovarnick	363	335,806	4,455	4,455	2	2	4^{p}	270
Wyckoff Heights Hospital $^{1-3}$	Brooklyn, N. Y.	....	...	....	.....	.....	..	..	2^{a}	...
Buffalo General Hospital $^{1-3}$	Buffalo	K. L. Terplan	518	10,055	7,592	7,478	2	4	3^{p}	175
Deaconess Hospital $^{1-3}$	Buffalo	S. Tannhauser	124	141,355	5,445	4,603	1	2	3^{p}	300
Edward J. Meyer Memorial Hospital $^{1-3}$	Buffalo	S. Sanes	559	436,149	5,188	5,188	2	6	3^{a}	247
Millard Fillmore Hospital $^{1-3}$	Buffalo	A. V. Postoloff	284	308,279	7,332	7,332	1	3	3^{a}	285
Roswell Park Memorial Institute $^{1-3}$	Buffalo	J. W. Pickren	403	402,036	6,121	6,121	2	8	2^{p}	318
Veterans Admin. Hospital $^{1-3}$	Buffalo	J. B. Sheffer	240	332,330	2,740	2,640	1	2	3^{p}	271
Mary Imogene Bassett Hospital $^{1-3}$	Cooperstown, N. Y.	C. V. Hawn	103	143,849	2,930	2,910	1	1	2^{a}	200
City Hospital at Elmhurst $^{1-3}$	Elmhurst, N. Y.	I. Chapman	408	230,966	2,259	2,247	1	4	4^{p}	145
Arnot Ogden Memorial Hospital $^{1-3}$	Elmira, N. Y.	W. Kelly	101	122,718	3,600	3,369	1	1	1^{a}	225
St. Joseph's Hospital $^{1-3}$	Elmira, N. Y.	J. A. Mitchell	102	165,403	3,344	2,056	1	2	2^{a}	350
Booth Memorial Hospital	Flushing, N. Y.	....	...	....	.....	.....	..	..	1^{a}	...
Flushing Hospital and Dispensary $^{1-3}$	Flushing, N. Y.	I. Garrow	158	127,327	3,968	3,593	1	4	4^{p}	175
Community Hospital at Glen Cove $^{1-3}$	Glen Cove, N. Y.	T. Robertson	115	125,578	3,968	2,878	1	3	2^{p}	300
Glens Falls Hospital $^{1-3}$	Glens Falls, N. Y.	M. Maslon	134	176,423	4,205	4,205	..	1	3^{p}	250
Meadowbrook Hospital $^{1-3}$	*Hempstead, N. Y.*	*V. S. Palladino*	*533*	*33,804*	*4,465*	*4,431*	3	12	4^{p}	225
Mary Immaculate Hospital $^{1-3}$	Jamaica, N. Y.	....	...	....	.....	.....	..	..	4^{p}	...
Queens Hospital Center $^{1-3}$	Jamaica, N. Y.	G. Silvermann	638	512,967	4,715	4,715	4	8	4^{p}	145
Charles S. Wilson Memorial Hospital $^{1-3}$	Johnson City, N. Y.	N. Elton	234	188,957	5,958	3,535	1	4	4^{p}	225
Kew Gardens General Hospital	Kew Gardens, N. Y.	....	...	......	....	....	..	..	1^{a}	...
Kingston Laboratory Hospitals $^{1-3}$	Kingston, N. Y.	H. Derman	160	240,316	5,603	5,603	1	4	2^{p}	265
Kingston Hospital	Kingston, N. Y.	....	...	......	....	....	..	..	..	...
Benedictine Hospital	Kingston, N. Y.		...	......	....	....	..	..	..	...
Ulster County Tuberculosis Hospital $^{1-3}$	Kingston, N. Y.	....	...	......	....	....	..	..	..	...
St. John's Long Island City Hospital $^{1-3}$	Long Island City, N. Y	E. Santora	96	58,419	1,697	1,626	1	1	1^{p}	200
North Shore Hospital $^{1-3}$	Manhasset, N. Y.	S. Gross	94	130,244	3,331	2,764	1	1	1^{p}	250
Nassau Hospital $^{1-3}$	Mineola, N. Y.	L. Ferraro	159	110,479	6,059	4,893	1	2	4^{p}	325
Mount Vernon Hospital $^{1-3}$	Mount Vernon, N. Y.	J. G. Shamoff	128	110,704	.....	.....	1	2	3^{p}	200
St. Luke's Hospital $^{1-3}$	Newburgh, N. Y.	T. P. B. Payne	118	77,262	2,667	2,667	1	2	2^{a}	250
Long Island Jewish Hospital $^{1-3}$	New Hyde Park, N. Y.	J. Berkman	191	322,492	5,788	5,213	2	4	3^{p}	75
New Rochelle Hospital $^{1-3}$	New Rochelle, N. Y.	W. C. Schraft	177	160,093	4,796	4,796	1	1	3^{a}	225
Bellevue Hospital Center										
Div. III—New York University										
College of Medicine $^{1-3}$	New York City	M. Kuschner	741	697,691	11,488	11,488	8	20	4^{p}	145
Beth Israel Hospital $^{1-3}$	New York City	W. Antopol	131	201,261	5,313	5,020	1	4	4^{p}	160
Bronx Hospital $^{1-3}$	*New York City*	*L. Reiner*	*127*	*184,146*	*3,318*	*3,301*	1	2	2^{p}	100
Bronx Municipal Hospital Center $^{1-3}$	New York City	A. A. Angrist	534	710,411	3,390	3,390	3	12	4^{p}	145
Fordham Hospital $^{1-3}$	New York City	L. J. Millman	193	127,338	2,151	2,145	2	3	3^{a}	145
Francis Delafield Hospital $^{1-3}$	New York City	H. P. Smith	198	103,370	6,779	6,779	..	6	3^{a}	145
Goldwater Memorial Hospital $^{1-3}$	New York City	J. Rosenthal	105	189,509	407	407	2	3	2^{p}	145
Harlem Hospital $^{1-3}$	New York City	V. B. Dolgopol	454	291,224	3,293	3,284	3	5	4^{p}	145
Hospital for Joint Diseases $^{1-3}$	New York City	H. L. Jaffe	70	100,622	2,567	2,567	2	2	1^{a}	80
Jewish Memorial Hospital $^{1-3}$	New York City	A. Schwarz	80	112,466	2,219	1,897	1	2	2^{p}	175
Knickerbocker Hospital $^{1-3}$	New York City	W. B. Ober	113	87,877	1,541	1,482	1	1	1^{a}	150
Lebanon Hospital $^{1-3}$	New York City	J. C. Ehrlich	149	182,857	3,705	3,705	1	3	3^{p}	125
Lenox Hill Hospital $^{1-3}$	New York City	S. R. Opler	155	138,641	4,054	3,765	1	2	4^{p}	240
Lincoln Hospital $^{1-3}$	New York City	H. Lepow	285	169,044	2,698	2,698	1	2	4^{p}	145
Memorial Center for Cancer and Allied Diseases $^{1-3}$	New York City	F. W. Stewart	454	478,756	17,432	17,432	..	11	3^{a}	300
James Ewing Hospital		....	...	....	.....	.....	..	..	..	...
Memorial Hospital		....	...	....	.....	.....	..	..	..	...
Montefiore Hospital $^{1-3}$	New York City	H. Zimmerman	431	280,195	5,344	5,240	3	7	3^{p}	187
Morrisania City Hospital $^{1-3}$	New York City	M. R. Dasco	274	146,043	2,478	2,176	2	4	4^{p}	145
Mount Sinai Hospital $^{1-3}$	New York City	H. Popper	452	418,966	9,857	9,857	5	14	4^{p}	75
New York Hospital $^{1-3}$	New York City	J. G. Kidd	513	517,515	9,052	628	3	6	4^{p}	164
New York Medical [illegible]										
Flower and Fift[illegible]	York City	F. D. Speer	115	181,522	7,811	6,571	4	4	4^{p}	125
Metropolitan Hospital $^{1-3}$	New York City	F. Speer	454	415,478	4,425	4,350	2	6	4^{p}	145
New York Polyclinic Medical School										
and Hospital $^{1-3}$	New York City	W. E. Finkelstein	93	97,418	4,434	4,434	1	2	3^{a}	125
New York University—Bellevue Medical Center										
University Hospital $^{1-3}$	New York City	M. N. Richter	142	5,840	5,840	5,077	2	2	2^{a}	107
Presbyterian Hospital ^{1}	New York City	H. P. Smith, R. Lattes	637	683,634	17,767	17,767	3	10	4^{p}	250
Roosevelt Hospital ^{3}	New York City	B. Kalfayan	174	231,568	3,955	3,955	2	3	2^{a}	133
St. Barnabas Hospital for Chronic Diseases $^{1-3}$	New York City	G. K. Higgins	145	122,476	1,560	1,560	1	3	2^{p}	75
St. Clare's Hospital $^{1-3}$	New York City	J. M. Ravid	147	128,655	3,612	3,612	1	2	2^{p}	200
St. Francis Hospital $^{1-3}$	New York City	....	...	....	.....	.....	..	..	4^{p}	...
St. Luke's Hospital $^{1-3}$	New York City	C. F. Begg	220	231,701	4,208	4,208	1	4	4^{p}	150
St. Vincent's Hospital $^{1-3}$	New York City	A. Rottino	476	271,390	4,827	4,827	1	4	4^{p}	200
Veterans Admin. Hospital (Bronx) $^{1-3-285}$	New York City	B. Gordon	440	569,560	4,139	4,139	3	8	4^{p}	271
Veterans Admin. Hospital (Manhattan) $^{1-3}$	New York City	S. L. Wilens	349	420,795	3,287	2,947	1	6	4^{p}	271
United Hospital $^{1-3}$	Port Chester, N. Y.	M. Loder	93	103,894	3,073	3,016	1	1	1^{p}	...
Vassar Brothers Hospital $^{1-3}$	Poughkeepsie, N. Y.	M. L. Dreyfuss	143	109,948	3,958	3,558	1	2	2^{p}	...
Genesee Hospital ^{3}	Rochester, N. Y.	J. Abbott	245	199,635	5,031	4,981	1	2	2^{a}	150
Rochester General Hospital $^{1-3}$	Rochester, N. Y.	M. G. Bohrod	385	247,438	12,062	10,096	2	8	4^{p}	150
St. Mary's Hospital $^{1-3}$	Rochester, N. Y.	J. Adler	277	139,243	3,985	3,267	1	4	4^{p}	225
Strong Memorial-Rochester Municipal Hospital $^{1-3}$	Rochester, N. Y.	J. L. Orbison	594	....	5,670	5,670	4	11	4^{p}	117
Ellis Hospital $^{1-3}$	Schenectady, N. Y.	G. Parkhurst	263	248,301	.....	.....	1	3	3^{p}	150
St. Vincent's Hospital $^{1-3}$	Staten Island, N. Y.	V. Kogan	132	113,324	3,157	3,157	1	1	1^{a}	240
Sea View Hospital $^{1-3-13}$	Staten Island, N. Y.	V. Altmann	129	125,429	267	264	1	1	1^{a}	145

Numerical and other references will be found on pages 788 through 790.

16. PATHOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of Autopsies	Total Number of Laboratory Examinations	Number of Surgical Specimens	Number Examined Microscopically	First Year Residencies Offered [6]	Total Residencies Offered [6]	Length of Approved Program (Years)	Beginning Stipend (Month)
Staten Island Hospital [1-3]	Staten Island, N. Y.	V. Altmann	123	84,991	2,262	2,262	1	1	1[a]	200
St. Joseph's Hospital [1-3]	Syracuse, N. Y.	H. J. Dick	201	163,676	4,184	4,184	2	2	2[p]	233
State University of New York										
Upstate Medical Center [1-3]	Syracuse, N. Y.	J. H. Ferguson	508	8,216	7,738	7,738	3	6	3[a]	233
Veterans Admin. Hospital [1-3]	Syracuse, N. Y.	J. A. Schaefer	191	160,600	2,396	2,372	1	2	3[p]	270
Samaritan Hospital [1-3]	Troy, N. Y.	C. G. Burn	87	92,216	2,678	2,678	1	1	1[a]	250
Utica State Hospital [1-3]	Utica, N. Y.	N M. Levine	102	28,413	170	179	1	1	4[p]	487
Grasslands Hospital [1-3]	Valhalla, N. Y.	V. A. Bradess	676	387,946	3,796	3,216	1	3	4[p]	175
[illegible] [1-3]	Yonkers, N. Y.	C. E. De Angelis	87	73,638	2,133	1,778	1	1	1[p]	275
[illegible]	N. C.	K. M. Brinkhous	265	6,133	3,659	3,659	5	12	4[p]	208
[illegible]	N. C.	F. G. Germuth, Jr.	198	182,374	5,986	5,783	1	4	4[p]	295
Presbyterian Hospital [1]	Charlotte, N. C.	H. L. Large, Jr.	175	147,324	6,948	6,707	1	2	2[a]	250
Duke University Affiliated Hospitals										
Duke Hospital [1-3]	Durham, N. C.	W D. Forbus	356	594,752	8,013	8,013	1	4	4[p]	150
Veterans Admin. Hospital [1-3]	Durham, N. C.	R. D. Baker	185	197,923	2,566	2,566	1	6	4[p]	270
Watts Hospital [1-3]	Durham, N. C.	J. U. Gunter	139	164,910	5,628	5,588	1	3	2[p]	300
Moses H. Cone Memorial Hospital [1-3]	Greensboro, N. C.	H. Z. Lund	176	106,865	5,372	5,356	..	2	4[p]	350
Veterans Admin. Hospital [1-3]	Oteen, N. C.	O. Kanner	166	324,909	1,922	1,906	..	1	1[p]	276
North Carolina Baptist Hospital [1-3]	Winston-Salem, N. C.	R. Morehead	257	328,508	6,128	6,128	2	7	4[p]	166
Akron City Hospital [1-3]	Akron, Ohio	L. Catron	425	314,036	8,326	8,326	1	3	4[p]	250
Akron General Hospital [1-3]	Akron, Ohio	G. R. Dochat	212	269,889	6,529	5,338	1	4	4[p]	250
Aultman Hospital [1-3]	Canton, Ohio	F. J. Raisch	247	327,072	8,827	8,797	1	4	4[p]	275
Mercy Hospital [1-3]	Canton, Ohio	A. Raftery	231	197,544	9,071	8,746	1	3	4[p]	...
Bethesda Hospital [3]	Cincinnati	J. Hamblet	268	60,204	3,972	3,251	1	3	3[p]	260
University of Cincinnati College of Medicine Hospital Group										
Cincinnati General Hospital [1-3]	Cincinnati	E. A. Gall	739	155,332	3,713	3,713	3	9	4[p]	100
Good Samaritan Hospital [1-3]	Cincinnati	L. Z. Gordon	317	240,328	12,663	5,390	1	4	3[a]	250
Jewish Hospital [1-3]	Cincinnati	P. Wasserman	298	297,593	7,771	6,960	1	4	3[p]	195
Cleveland Clinic Hospital [1-3]	Cleveland	J. B. Hazard	356	644,396	8,980	8,980	2	8	4[p]	275
Cleveland Metropolitan General Hospital [1-3]	Cleveland	T. D. Kinney	379	328,760	4,770	4,770	4	10	4[p]	150
Evangelical Deaconess Hospital [1-3]	Cleveland	F. M. Bayless	146	100,372	3,200	3,200	1	1	2[a]	175
Huron Road Hospital [1-3]	Cleveland	E. Goodsitt	207	321,324	10,804	10,804	1	1	4[p]	210
Lutheran Hospital [1-3]	Cleveland	W. Sinclair	149	89,981	2,983	2,786	1	2	2[p]	250
Mount Sinai Hospital [1-3]	Cleveland	H. Goldblatt	326	427,571	7,389	7,389	1	4	4[p]	215
St. Luke's Hospital [1-3]	Cleveland	A. J. Segal	304	348,052	6,340	5,980	1	4	4[p]	200
St. Vincent Charity Hospital [1-3]	Cleveland	J. S. Mackrell, Jr.	210	236,748	4,645	3,890	2	8	4[p]	210
University Hospitals [1-3]	Cleveland	A. R. Moritz	565	517,159	12,350	12,350	4	10	4[p]	125
Veterans Admin. Hospital [1-3-330]	Cleveland	J. R. Kahn	454	310,426	3,505	3,155	1	4	4[p]	271
Children's Hospital [1-3]	Columbus, Ohio	W. A. Newton	280	146,035	3,120	3,120	1	3	1[p]	175
Grant Hospital [1-3]	Columbus, Ohio	B. H. Hurd	135	131,309	5,264	5,250	1	3	3[p]	300
Ohio State University Hospitals										
University Hospital [1-3]	Columbus, Ohio	E. Von Haam	603	985,657	8,846	8,671	4	16	4[p]	177
White Cross Hospital [1-3]	Columbus, Ohio	R. J. Johansmann	239	231,214	11,514	11,037	1	3	3[a]	290
Miami Valley Hospital [1-3]	Dayton, Ohio	M. Oosting	804	441,184	8,969	8,969	3	12	4[p]	225
Veterans Admin. Hospital [1-3]	Dayton, Ohio	G. P. Herrea	314	206,815	1,411	1,411	1	2	2[a]	271
Elyria Memorial Hospital [1-3]	Elyria, Ohio	R. G. Thomas	88	141,129	29,375	29,375	1	1	4[p]	270
Marymount Hospital [1-3]	Garfield Heights, Ohio	E. E. Siegler	96	138,043	2,341	2,018	1	1	1[a]	200
Mercy Hospital [1-3]	Hamilton, Ohio	K. Lande	175	109,817	2,003	2,003	1	3	3[a]	200
St. Rita's Hospital [1-3]	Lima, Ohio	C. L. Blumstein	193	147,268	4,707	3,682	1	4	4[p]	325
St. Joseph Hospital [1-3]	Lorain, Ohio	...	...	....	.....	.....	..	..	4[p]	...
Springfield City Hospital [1-3]	Springfield, Ohio	R. E. Wybel	177	140,214	5,839	4,927	1	2	2[a]	300
Maumee Valley Hospital [1-3]	Toledo, Ohio	J. G. Snavely	195	133,034	1,112	1,081	2	2	4[p]	285
Mercy Hospital [1-3]	Toledo, Ohio	E. L. Burns	235	169,330	5,723	5,105	1	4	4[p]	275
St. Vincent's Hospital [1-3]	Toledo, Ohio	M. F. Vidoli	269	221,166	6,748	4,697	1	2	4[p]	325
Toledo Hospital [1-3]	Toledo, Ohio	B. Steinberg	459	155,821	5,298	4,908	1	4	4[p]	275
Trumbull Memorial Hospital [1-3]	Warren, Ohio	R. J. Williams	151	166,851	3,830	3,639	..	2	2[a]	300
St. Elizabeth Hospital [1-3]	Youngstown, Ohio	B. Taylor	260	245,496	8,174	6,558	1	4	4[p]	300
Youngstown Hospital [1-3]	Youngstown, Ohio	A. E. Rappoport	504	383,408	8,104	6,649	2	8	4[p]	325
St. Anthony Hospital	Oklahoma City	W. T. Snoddy	161	252,677	7,554	5,357	1	4	4[p]	300
University of Oklahoma Medical Center		W. E. Jaques	...	....	.....	.....	1	4	4[p]	...
University Hospital [1-3]	Oklahoma City	...	268	335,144	4,490	3,596	..	..	..	200
Veterans Admin. Hospital [1]	Oklahoma City	C. D. Tool	210	187,009	2,006	2,007	..	..	..	271
Hillcrest Medical Center [1]	Tulsa, Okla.	L. Lowbeer	183	304,558	7,073	5,128	2	8	4[p]	200
St. John's Hospital [1]	Tulsa, Okla.	E. E. Palik	190	305,682	9,815	7,297	1	3	4[p]	175
Emanuel Hospital [1-3]	Portland, Ore.	V. D. Sneeden	314	210,382	8,981	6,929	1	2	3[a]	275
Good Samaritan Hospital [1-3]	Portland, Ore.	W. Lehman	282	374,483	27,554	15,590	1	4	4[p]	275
Providence Hospital [1-3]	Portland, Ore.	J. Minckler	234	308,921	8,855	7,641	1	4	4[p]	275
St. Vincent's Hospital [1-3]	Portland, Ore.	J. E. Nohlgren	271	266,055	10,330	8,827	1	4	4[p]	275
University of Oregon Medical School Hospitals and Clinics [1-3]	Portland, Ore.	W. C. Hunter, R. Grondahl	521	328,048	5,131	5,131	4	8	4[p]	125
Veterans Admin. Hospital [1-3]	Portland, Ore	E. J. Losli	326	214,638	3,280	3,220	2	4	2[a]	270
Abington Memorial Hospital [1-3]	Abington, Pa.	J. W. Eiman	248	210,240	3,540	3,540	1	4	4[p]	150
Allentown Hospital [1-3]	Allentown, Pa.	R E. Bovard	272	279,424	11,116	10,481	1	4	4[p]	225
Sacred Heart Hospital [1-3]	Allentown, Pa.	D. E. Stader	134	178,794	8,254	7,753	1	2	2[a]	225
Altoona Hospital [1-3]	Altoona, Pa.	G. J. Heid	138	142,291	5,402	5,132	2	4	2[a]	325
St. Luke's Hospital [1-3]	Bethlehem, Pa.	E. J. Benz	266	196,708	4,537	4,300	..	2	4[p]	225
Bryn Mawr Hospital [3]	Bryn Mawr, Pa.	M. M. Strumia	240	283,994	4,425	3,972	1	4	4[p]	200
Chester Hospital [1-3]	Chester, Pa.	G. B. Sickel	260	145,302	2,355	2,355	2	3	2[a]	350
Geo. F. Geisinger Memorial Hospital [1-3]	Danville, Pa.	T. K. Hepler	216	295,516	3,863	3,353	1	4	4[p]	175
Thomas M. Fitzgerald Mercy Hospital	Darby, Pa.	W. H. Miller	185	143,535	2,886	2,886	2	8	4[p]	200
Hamot Hospital [1-3]	Erie, Pa.	E. L. Armstrong	209	332,634	8,673	8,226	1	4	4[p]	250
St Vincent's Hospital [1-3]	Erie, Pa.	R. Eisenberg	215	176,707	4,560	4,540	1	4	4[p]	275
Harrisburg Hospital [1-3]	Harrisburg, Pa.	F. W. Brason	346	434,944	11,856	11,806	1	4	4[p]	250
Harrisburg Polyclinic Hospital [1]	Harrisburg, Pa.	J. S. Forrester	272	265,264	7,926	6,496	1	2	2[a]	250
Conemaugh Valley Memorial Hospital [1-3]	Johnstown, Pa.	W. W. Ayres	174	227,812	13,907	9,407	1	4	4[p]	300
Lancaster General Hospital [1-3]	Lancaster, Pa.	W. M. O'Donnell	221	176,628	4,510	4,510	2	4	2[a]	200
St. Joseph's Hospital [1-3]	Lancaster, Pa.	H. G. Shaub, Jr.	144	149,444	3,128	3,128	1	2	2[a]	300
Montgomery Hospital [1-3]	Norristown, Pa.	H. T. Tamaki	125	83,849	2,100	2,100	..	2	2[p]	250
Albert Einstein Medical Center										
Northern Division [1-3]	Philadelphia	H. Brody	304	251,170	5,753	5,753	3	4	4[p]	125
Southern Division [1-3]	Philadelphia	D. R. Meranze	161	214,955	3,319	3,319	1	4	4[p]	125

Numerical and other references will be found on pages 788 through 790.

16. PATHOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of Autopsies	Total Number of Laboratory Examinations	Number of Surgical Specimens	Number Examined Microscopically	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
Children's Hospital [1-3]	Philadelphia	....	...	....	.....	.....	..	..	1^a	...
Episcopal Hospital [1-3]	Philadelphia	A. D. Wallis	173	169,526	2,476	2,476	1	1	4^p	150
Frankford Hospital [1-3]	Philadelphia	L. Rauer	147	126,540	3,362	3,362	1	2	3^p	...
Germantown Dispensary and Hospital [1-3]	Philadelphia	F. Fite	183	133,368	3,944	3,944	4	4	4^p	175
Graduate Hospital of the University of Pennsylvania [1-3]	Philadelphia	A. Valdes Dapena	179	186,478	3,497	3,497	2	2	3^a	167
Hahnemann Medical College and Hospital [1-3]	Philadelphia	J. E. Imbriglia	350	291,739	6,000	6,000	2	8	4^p	75
Hospital of the University of Pennsylvania [1-3]	Philadelphia	H. T. Enterline, R. Norris	467	488,927	8,500	8,500	3	12	4^p	150
Hospital of the Woman's Medical College of Pennsylvania [1-3]	Philadelphia	I. N. Dubin, M. Porter	212	93,126	2,085	2,080	1	4	4^p	110
Jefferson Medical College Hospital [1-3]	Philadelphia	P. A. Herbut	317	490,935	11,442	11,442	3	8	4^p	150
Lankenau Hospital [1-3]	Philadelphia	C. E. Brown	179	189,114	4,021	4,021	1	4	4^p	200
Misericordia Hospital [1-3]	Philadelphia	H. E. Marx	168	143,604	3,194	3,194	1	2	2^p	250
Pennsylvania Hospital [1-3]	Philadelphia	A. R. Crane	309	315,367	4,106	4,106	2	4	4^p	100
Philadelphia General Hospital [1-3]	Philadelphia	W. Ehrich	1,165	783,211	7,266	7,266	2	6	4^p	121
Presbyterian Hospital [1-3]	Philadelphia	R. P. Custer	263	176,590	5,126	4,716	2	8	4^p	175
Temple University Hospital [1-3]	Philadelphia	E. E. Aegerter	603	23,292	8,108	8,108	2	9	4^p	...
Veterans Admin. Hospital [1-3]	Philadelphia	S. Bornstein	324	229,187	2,195	2,184	1	4	3^a	270
Allegheny General Hospital [1-3]	Pittsburgh	R. C. Grauer	250	210,018	4,388	4,388	1	4	4^p	400
Children's Hospital [1-3]	Pittsburgh	G. H. Fetterman	169	114,239	1,525	1,525	2	4	1^p	200
Health Center Hospitals of the University of Pittsburgh School of Medicine										
Presbyterian Hospital—Woman's Hospital [1-3]	Pittsburgh	T. J. Moran	273	313,977	5,002	4,997	4	12	4^p	125
Veterans Admin. Hospital [1-3]	Pittsburgh	E. R. Fisher	444	305,398	2,739	2,739	3	8	4^p	271
Mercy Hospital [1-3]	Pittsburgh	M. M. Bracken	266	375,172	8,420	6,736	1	4	4^p	235
Montefiore Hospital [1-3]	Pittsburgh	K. Y. Yardumian	200	166,624	5,867	4,638	1	4	4^p	225
St. Francis General Hospital and Rehabilitation Institute [1-3]	Pittsburgh	R. C. Hamilton	203	258,438	3,745	3,722	1	4	4^p	240
St. Margaret Memorial Hospital [1-3]	Pittsburgh	J. E. Kurtz	78	89,940	1,988	1,988	1	1	1^p	300
Shadyside Hospital [1]	Pittsburgh	E. L. Heller	214	121,795	3,644	2,500	1	4	4^p	400
South Side Hospital [1-3]	Pittsburgh	L. Goodman	169	137,353	2,318	2,308	1	2	2^a	350
Western Pennsylvania Hospital [1-3]	Pittsburgh	R. G. McManus	323	209,470	7,939	6,265	2	8	3^a	225
Community General Hospital [1-3]	Reading, Pa.	H. S. Cook	149	73,229	2,189	2,163	2	2	2^p	300
Reading Hospital [1-3]	Reading, Pa.	W. P. Jennings	329	176,985	4,693	4,662	2	8	4^p	...
St. Joseph's Hospital [1-3]	Reading, Pa.	G. P. Desjardins	157	140,691	4,934	7,003	1	2	2^a	...
Robert Packer Hospital [1-3]	Sayre, Pa.	C. H. DeWan	174	241,487	4,056	3,856	1	4	4^p	225
Scranton State Hospital [3]	Scranton, Pa.	J. J. O'Connor, Jr.	112	94,080	1,617	1,411	1	1	1^a	417
Wilkes-Barre General Hospital [1-3]	Wilkes-Barre, Pa.	C. E. Rodriguez	184	126,375	11,925	11,425	1	2	2^a	225
Williamsport Hospital [1-3]	Williamsport, Pa.	M. G. Colvin	102	135,817	6,589	6,043	1	1	4^p	225
York Hospital [3]	York, Pa.	T. J. Burkart	323	190,556	8,183	8,183	1	1	3^a	300
Aguadilla District Hospital [1-3]	Aguadilla, P. R.	D. A. Jutzy	235	51,704	.....	1,461	..	..	1^a	250
Arecibo District Hospital [1-3]	Arecibo, P. R.	M. A. De Jesus	132	109,297	1,241	1,241	..	..	1^a	...
Bayamon Charity District Hospital	Bayamon, P. R.	R. Ramirez Weiser	387	124,283	4,357	4,357	1	4	4^p	250
Ponce District General Hospital [3]	Ponce, P. R.	E. Rivera	240	137,312	2,650	2,650	2	4	2^a	250
San Juan City Hospital [1-3]	San Juan, P. R.	E. Koppisch	186	203,223	2,432	2,432	2	4	3^a	175
Dr. I. Gonzalez Martinez Oncologic Hospital [1-3-41]	San Juan, P. R.	R. A. M. Rojas	21	4,100	4,177	3,900	..	2	1^a	200
Veterans Admin. Hospital [1-3-106]	San Juan, P. R.	F. M. Reyes	63	92,641	1,454	1,454	1	2	1^a	318
Newport Hospital [1-3]	Newport, R. I.	W. Freeman	83	139,187	4,348	2,707	1	1	1^a	150
Memorial Hospital [1-3]	Pawtucket, R. I.	G. P. Paparo	134	213,316	3,694	3,298	1	1	4^p	...
Rhode Island Hospital [1-3]	Providence, R. I.	H. Fanger	369	368,196	11,172	11,052	2	8	4^p	125
Teaching Hospitals of the Medical College of South Carolina [1]	Charleston, S. C.	K. M. Lynch, Sr.	542	297,378	25,418	19,064	1	4	4^p	137
Medical College Hospital		....	...	....	.....	.....	..	..	..	...
Roper Hospital		....	...	....	.....	.....	..	..	..	...
Greenville General Hospital [1-3]	Greenville, S. C.	E. A. Dreskin	266	222,862	14,237	6,946	1	3	4^p	275
Spartanburg General Hospital [1]	Spartanburg, S. C.	J. R. Cain	256	223,023	6,695	5,315	1	1	4^p	200
Sioux Valley Hospital [1-3]	Sioux Falls, S. Dak.	C. Mitchell	129	95,545	3,629	2,894	1	3	3^p	200
Baroness Erlanger Hospital [1-3]	Chattanooga, Tenn.	J. W. Adams	423	339,747	16,436	16,436	1	4	4^p	325
East Tennessee Baptist Hospital [1-3]	Knoxville, Tenn.	R. J. Leffler	107	115,582	5,359	4,823	1	3	2^p	325
St. Mary's Memorial Hospital [3]	Knoxville, Tenn.	G. S. Mahon	107	126,906	6,248	3,807	2	5	4^p	250
University of Tennessee Memorial Research Center and Hospital [1]	Knoxville, Tenn.	F. Jones	151	161,565	2,441	2,141	1	2	3^p	320
Baptist Memorial Hospital [1-3]	Memphis, Tenn.	M. Trumbull	365	344,811	15,476	12,778	3	9	4^p	325
City of Memphis Hospitals [1-3]	Memphis, Tenn.	D. H. Sprunt	679	63,833	6,411	6,411	5	12	4^p	150
Methodist Hospital	Memphis, Tenn.	W. W. Tribby	121	153,880	8,607	7,798	1	3	3^p	325
St. Joseph Hospital [1-3]	Memphis, Tenn.	L. Prieto	123	132,775	5,357	4,557	1	2	2^a	325
Veterans Admin. Hospital [1-3]	Memphis, Tenn.	J. M. Young	468	378,085	5,234	4,760	2	5	3^p	271
Baptist Hospital [1-3]	Nashville, Tenn.	F. G. Womack	142	203,071	12,608	5,207	2	3	2^a	300
George W. Hubbard Hospital [1-3]	Nashville, Tenn.	....	169	2,056	2,056	2,056	..	..	2^a	...
Nashville General Hospital [1-3]	Nashville, Tenn.	W. Demonbreun	108	143,370	8,660	8,526	1	2	2^p	325
Vanderbilt University Hospital [1-3]	Nashville, Tenn.	J. L. Shapiro	258	300,000	3,300	3,267	2	5	4^p	50
Oak Ridge Institute of Nuclear Studies—Medical Division [1-3-32]	Oak Ridge, Tenn.	B. M. Nelson	20	1,308	230	230	..	2	1^a	255
Brackenridge Hospital [1-3]	Austin, Texas	J. R. Rainey, Jr.	166	86,900	3,281	2,865	1	1	4^p	200
Baylor University Hospital [3]	Dallas, Texas	J. M. Hill	273	389,580	14,742	12,258	3	9	4^p	180
Methodist Hospital [1-3]	Dallas, Texas	A. B. Cairns	110	98,870	7,124	4,915	1	4	2^p	250
Parkland Memorial Hospital [1-3]	Dallas, Texas	C. T. Ashworth	406	917,817	7,272	7,272	4	12	4^p	150
St. Paul's Hospital [1-3]	Dallas, Texas	J. L. Goforth	243	476,505	11,548	9,097	2	8	4^p	150
Harris Hospital [1]	Fort Worth, Texas	C. D. Fitzwilliam	168	224,175	7,337	6,387	1	4	4^p	300
St. Joseph's Hospital [1]	Fort Worth, Texas	O. J. Wolleninan, Jr.	141	164,505	10,612	5,768	..	1	4^p	350
University of Texas Medical Branch Hospitals [1-3]	Galveston, Texas	H. C. Hopps	394	321,766	8,855	8,742	2	8	4^p	160
Baylor University College of Medicine Affiliated Hospitals										
Jefferson Davis Hospital [1-3]	Houston, Texas	S. A. Wallace	459	403,213	6,005	100	2	6	4^p	250
Methodist Hospital [1-3]	Houston, Texas	J. P. Abbott	211	505,725	7,173	7,173	1	4	4^p	220
Texas Children's Hospital [1-3]	Houston, Texas	H. Rosenberg	125	209,039	1,686	1,225	1	1	1^a	200
Veterans Admin. Hospital [1-3]	Houston, Texas	B. Halpert	458	463,840	2,839	2,684	1	4	4^p	270
Hermann Hospital [1-3]	Houston, Texas	W. G. Brown	382	534,460	14,260	12,806	1	4	4^p	125
Memorial Hospital [1-3]	Houston, Texas	F. Leidler	135	282,783	9,305	9,035	1	3	3^p	220
St. Joseph's Hospital [3]	Houston, Texas	P. M. Marcuse	241	242,630	6,526	5,902	1	2	4^p	220
University of Texas M. D. Anderson Hospital and Tumor Institute [1-3]	Houston, Texas	W. O. Russell	306	301,375	8,247	8,247	1	8	4^p	300

Numerical and other references will be found on pages 788 through 790.

16. PATHOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of Autopsies	Total Number of Laboratory Examinations	Number of Surgical Specimens	Number Examined Microscopically	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
Veterans Admin. Hospital [1-3]	McKinney, Texas	R. D. Reed	117	130,792	1,297	1,297	1	1	4^p	271
Baptist Memorial Hospital [1-3]	San Antonio, Texas	A. O. Severance	180	230,053	5,670	5,401	1	4	4^p	150
Robert B. Green Memorial Hospital [1-3]	San Antonio, Texas	D. L. Galindo	407	245,995	3,236	2,918	2	6	3^p	150
Santa Rosa Hospital [1-3]	San Antonio, Texas	N. Jacob	270	252,951	5,825	5,219	1	4	4^p	200
Scott and White Memorial Hospitals [1-3]	Temple, Texas	J. C. Stinson, W. N. Powell	101	274,798	7,844	7,575	1	3	4^p	300
St. Benedict's Hospital [1-3]	Ogden, Utah	E. E. Pautler	93	105,040	4,216	2,213	1	1	1^a	325
Thomas D. Dee Memorial Hospital [1]	Ogden, Utah	W. A. Bennett	177	141,888	5,989	4,413	1	2	2^p	300
Dr. W. H. Groves Latter-Day Saints Hospital [1-3]	Salt Lake City	J. H. Carlquist	273	351,910	8,582	8,582	1	4	4^p	275
Holy Cross Hospital [1-3]	Salt Lake City	C. McNeil	132	123,654	5,930	5,112	1	1	2^p	275
University of Utah Affiliated Hospitals										
Salt Lake County General Hospital [1-3]	Salt Lake City	W. H. Carnes	281	99,386	1,800	1,700	3	9	3^a	250
Veterans Admin. Hospital [1-3]	Salt Lake City	T. Cochran	173	186,747	1,367	1,300	3	9	1^a	250
University of Vermont Affiliated Hospitals		....	...	......	.....	.....	..	..	4^p	...
DeGoesbriand Memorial Hospital [1-3]	Burlington, Vt.	E. Stark	121	66,163	2,354	2,354	2	8	..	200
Mary Fletcher Hospital [1-3]	Burlington, Vt.	R. Coon	221	100,837	3,727	3,500	2	8	..	200
University of Virginia Hospital [1-3]	Charlottesville, Va.	D. E. Smith, O. B. Bobbitt	430	325,000	11,549	11,549	3	10	4^p	200
Memorial Hospital [1-3]	Danville, Va.	J. W. Hooker	137	120,409	6,844	6,844	1	4	4^p	...
Lynchburg General Hospital [1-3]	Lynchburg, Va.	S. M. Bouton	108	63,906	3,312	2,870	1	1	2^p	200
Riverside Hospital [1-3]	Newport News, Va.	M. F. Sherrill	102	177,992	5,721	5,721	1	1	1^a	250
DePaul Hospital [1-3]	Norfolk, Va.	A. F. Strauss	241	236,885	17,578	7,902	1	4	4^p	200
Norfolk General Hospital [1-3]	Norfolk, Va.	E. D. Levy, R. Shuman	253	179,345	8,603	8,603	1	4	4^p	200
Maryview Hospital	Portsmouth, Va.	....	...	......	.....	.....	..	..	2^a	...
Johnston-Willis Hospital [1-3]	Richmond, Va.	J. L. Thornton	107	70,735	4,008	4,008	1	1	1^a	250
Medical College of Virginia—Hospital Division [1-3]	Richmond, Va.	L. F. Belter, S. Kay	596	581,673	9,193	8,445	1	6	4^p	75
Richmond Memorial Hospital [1-3]	Richmond, Va.	W. M. Monroe	106	178,496	8,159	3,640	2	2	1^p	350
Veterans Admin. Hospital [1-3]	Richmond, Va.	J. R. Kriz	267	221,091	2,735	2,532	1	4	4^p	271
Children's Orthopedic Hospital [1]	Seattle	S. A. Creighton	147	110,310	1,940	689	..	2	1^a	180
Doctors Hospital [1-3]	Seattle	R. C. Ellis	154	124,785	6,331	4,370	1	2	2^a	250
Providence Hospital [1-3]	Seattle	D. G. Mason	204	122,000	6,705	4,561	2	2	2^a	300
Swedish Hospital [1-3]	Seattle	P. K. Lund	258	204,609	10,915	10,915	1	4	4^p	225
University of Washin										
King County Hospi	Seattle	I. I. Schuldberg	811	243,234	10,854	3,646	1	4	4^p	150
Veterans Admin. Hospital [1-3]	Seattle	D. V. Brown	213	98,272	1,883	1,808	1	3	3^p	271
Virginia Mason Hospital [1-3]	Seattle	H. W. Jones	240	227,425	6,465	5,632	1	1	4^p	150
Deaconess Hospital [1-3]	Spokane, Wash.	T. E. Ludden	238	140,898	.....	.....	..	1	3^a	300
Sacred Heart Hospital [1-3]	Spokane, Wash.	J. E. Hill, J. D. MacCarthy	221	210,866	9,024	8,981	2	3	3^a	250
St. Luke's Hospital [1-3]	Spokane, Wash.	O. O. Christianson	102	157,118	5,431	4,207	1	1	2^p	225
St. Joseph Hospital [1]	Tacoma, Wash.	C. R. McColl, R. T. Vimont	90	89,445	4,804	4,508	2	4	2^a	300
Tacoma General Hospital [1-3]	Tacoma, Wash	C. P. Larson, M. J. Wicks	376	157,139	13,928	11,171	1	4	4^p	250
Beckley Memorial Hospital [1-3]	Beckley, W. Va.	W. A. Laqueur	105	330,000	2,950	2,788	1	3	1^a	400
Charleston General Hospital [1-3]	Charleston, W. Va.	P. Ladewig, W. Garrard	122	76,168	2,918	2,874	1	3	4^p	225
Memorial Hospital [1-3]	Charleston, W. Va.	G. B. Swoyer	156	93,830	4,079	4,079	1	2	2^a	250
St. Mary's Hospita	Clarksburg, W. Va.	H. Fischer	145	115,484	3,601	2,308	2	2	2^p	300
Cabell Huntington	Huntington, W. Va.	S. Werthammer	96	133,526	7,258	7,150	1	2	3^a	250
St. Mary's Hospital [1-3]	Huntington, W. Va.	S. Werthammer	189	228,404	4,719	3,771	1	1	3^a	275
Veterans Admin. Hospital [1-3]	Martinsburg, W. Va.	R. G. Gottschalk	166	182,966	1,481	1,358	1	2	2^p	270
Ohio Valley General Hospital [1-3]	Wheeling, W. Va.	H. G. Little	205	129,375	5,548	4,631	1	4	4^p	300
Beloit Hospital [1-3]	Beloit, Wis.	E. W. Cauldwell	139	98,004	2,597	1,790	..	2	2^a	200
St. Agnes Hospital [1-3]	Fond du Lac, Wis.	R. W. Steube	118	140,305	5,558	2,752	2	4	2^a	250
Madison General Hospital [1-3]	Madison, Wis.	P. G. Piper	189	149,283	6,993	6,282	1	4	4^p	175
University Hospital [1-3]	Madison, Wis.	F. Larson, D. M. Angevine	349	253,329	4,761	4,694	3	6	4^p	100
St. Joseph's Hospital [1]	Marshfield, Wis.	F. J. Glassy	113	85,496	2,502	2,034	3	3	3^p	350
Columbia Hospital [1-3-396]	Milwaukee	G. Ritchie	175	92,784	4,131	2,871	1	4	4^p	270
Evangelical Deaconess Hospital [1-3]	Milwaukee	R. S. Haukohl	152	129,951	4,623	3,674	1	3	4^p	300
Milwaukee County Hospital [1-3]	Milwaukee	P. Kimmelstiel	551	397,318	3,358	3,061	2	8	4^p	216
Milwaukee Hospital [1-3]	Milwaukee	E. A. Birge	177	175,164	6,604	5,768	1	4	4^p	270
Mount Sinai Hospital [3]	Milwaukee	....	...	......	.....	.....	..	..	4^p	...
St. Joseph's Hospital [1]	Milwaukee	C. H. Altshuler	188	194,739	9,011	7,703	1	4	4^p	300
St. Luke's Hospital [1-3]	Milwaukee	B. E. Clark	164	124,998	3,609	2,851	1	4	4^p	325
St. Mary's Hospital [1-3-398]	Milwaukee	S. B. Pessin	157	111,368	3,718	2,214	1	4	4^p	300
Veterans Admin. Hospital [1-3]	Milwaukee (Wood), Wis.	R. M. Maynard	520	339,361	2,816	2,654	2	3	4^p	271

17. PEDIATRIC ALLERGY

Residency programs in the following hospitals have been approved for TWO years of training by the Council, the American Academy of Pediatrics, the American Board of Pediatrics, and the Sub-Specialty Board of Pediatric Allergy, through the Residency Review Committee for Pediatrics. (Applicants intending to qualify for examination by the Sub-Specialty Board of Pediatric Allergy of the American Board of Pediatrics, should refer to the Board Requirements on Page 828, and the explanatory footnote (*) on *"Mixed," "Adult"* and "Pediatric" categories below.)

Hospitals, 21; Residencies, 27

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
University of California Hospital [1-3]	Los Angeles	E. M. Heimlich	42	1,572	1	1	350
University of California Hospitals [1]	San Francisco	W. Deamer, T. Nelson	50	2,500	1	2	300
University of Colorado Medical Center							
Colorado General Hospital [1-3]	Denver	C. H. Kempe	..	1,719	2	4	180
Denver General Hospital [1-3]	Denver	C. H. Kempe	..	102	..	..	...
Children's Hospital [1-3]	Washington, D.C.	R. H. Todd	145	2,963	2	3	300
Michael Reese Hospital [1-3]	Chicago	N. Mosko, A. Matheson	48	1,806	1	1	125

Numerical and other references will be found on pages 788 through 790.

17. PEDIATRIC ALLERGY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Outpatient Visits	First Year Residencies Offered	Total Residencies Offered	Beginning Stipend (Month)
*University of Illinois Research and Educational Hospitals [1-3]	Chicago	M. Samter	125	1,813	1	1	300
*Johns Hopkins Hospital [1-3]	Baltimore	R. Cooke	245	5,200	1	..	...
Children's Medical Center [1-3]	Boston	H. L. Mueller	85	3,350	..	1	300
*Massachusetts General Hospital [1-3]	Boston	L. Burgin	20	1,715	1	1	417
*Mayo Foundation [1]	Rochester, Minn.	G. B. Logan	..	....	1	1	...
*Children's Hospital [1-3]	Buffalo	V. Cohen	..	....	..	1	175
*Roosevelt Hospital [3]	New York City	R. A. Cooke	60	9,000	2	2	200
*Strong Memorial—Rochester Municipal Hospitals [1-3]	Rochester, N. Y.	J. Glaser	78	1,820	1	1	417
Duke Hospital [1-3]	Durham, N. C.	S. Dees	..	972	..	2	250
Children's Hospital [1]	Columbus, Ohio	I. Sivon, W. Wheeler	102	1,968	2	..	200
Children's Hospital [1-3]	Philadelphia	H. I. Lecks	100	2,500	1	1	...
*Rhode Island Hospital [1-3]	Providence, R. I.	S. S. Freedman	..	3,026	1	1	225
Children's Medical Center [1-3]	Dallas, Texas	S. Halpern	2,181	2,744	1	1	417
Texas Children's Hospital [1-3]	Houston, Texas	J. P. McGovern	75	2,294	1	2	...
*University Hospitals [1-3]	Madison, Wis.	S. B. Crepea	..	....	1	1	200

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* The total residency programs in Allergy at these centers also include Adult Allergy. Accordingly, residency programs in centers with the symbol (*) are in the "Mixed" category referred to under Board Requirements on page 828. Reference should also be made to the listing of hospitals approved in Allergy on page 707. Residency programs in these hospitals are in the "Adult" category referred to under Board Requirements on page 828. All other residency programs listed above under Pediatric Allergy, are in the "Pediatric" category referred to on this page.

18. PEDIATRICS

Residency programs in the following hospitals have been approved by the Council, the American Academy of Pediatrics and the American Board of Pediatrics, through the Residency Review Committee for Pediatrics, as offering full training in the specialty: (i. e., TWO or more years).

Hospitals, 278; Residencies, 1826

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
UNITED STATES AIR FORCE							
U. S. Air Force Hospital	San Antonio, Texas	T. M. Holcomb	978	30	3	6	...
UNITED STATES ARMY							
Letterman Army Hospital [1-3]	San Francisco	F. Biehusen	1,261	32	2	4	...
Fitzsimons Army Hospital [1-3]	Denver	H. J. Umlauf, Jr.	2,650	25	3	6	...
Army Medical Center [1-3]	Washington, D. C.	O. C. Bruton	1,628	43	3	6	...
William Beaumont Army Hospital [1-3]	El Paso, Texas	T. W. Cap	947	19	2	4	...
Brooke Army Hospital [1-3]	San Antonio, Texas	L. J. Geppert	3,226	12	3	9	...
Madigan Army Hospital [1-3]	Tacoma, Wash.	E. J. Tomsovic	656	10	3	6	...
Tripler Army Hospital [1-3]	Honolulu, Hawaii	J. P. Fairchild	1,345	19	3	6	...
UNITED STATES NAVY							
U. S. Naval Hospital [1-3]	Oakland, Calif.	M. Kurzrok	1,633	17	2	4	...
U. S. Naval Hospital [1]	San Diego, Calif.	E. R. Moeller	1,708	13	2	4	...
U. S. Naval Hospital [1-3]	Bethesda, Md.	T. E. Cone, Jr.	328	40	2	4	...
U. S. Naval Hospital [1-3]	Chelsea, Mass.	A. M. Margileth	735	28	2	4	...
U. S. Naval Hospital [1]	Philadelphia	W. I. Neikirk	421	13	2	4	...
U. S. Naval Hospital [1-3]	Portsmouth, Va.	E. M. Leach	1,941	75	2	4	...
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE							
Freedmen's Hospital [1-3]	Washington, D. C.	R. B. Scott	715	20	2	6	308
NONFEDERAL							
University of Alabama Medical Center Children's Hospital [1]	Birmingham, Ala.	W. A. Clyde	3,593	...	..	..	...
University Hospital and Hillman Clinic [1-3]	Birmingham, Ala.	K. Hare	4,645	134	6	12	143
Lloyd Noland Hospital [1-3]	Fairfield, Ala.	G. C. McCullough	1,545	5	2	4	250
Mobile General Hospital [1-3]	Mobile, Ala.	J. H. Baumbauer	654	31	2	2	275
Maricopa County General Hospital [1-3]	Phoenix, Ariz.	D. B. Manley	759	31	1	2	325
St. Joseph's Hospital [1-3]	Phoenix, Ariz.	J. Kaye	1,513	24	1	2	250
University Hospital [1]	Little Rock, Ark.	T. C. Panos	3,430	118	6	14	160
Kern County General Hospital [1-3]	Bakersfield, Calif.	J. Thorner	980	18	2	4	350
General Hospital of Fresno County [1-3-80]	*Fresno, Calif.*	E. C. Defoe, Jr.	940	25	2	4	300
California Babies and Children's Hospital [1-3]	Los Angeles	T. L. Birnberg	286	4	1	2	200
Cedars of Lebanon Hospital [1-3]	Los Angeles	B. Kagan	1,828	19	2	4	265
Children's Hospital [1]	Los Angeles	R. Ward	8,512	242	13	27	150
Los Angeles County Hospital [1]	Los Angeles	R. F. Chinnock	6,324	136	8	16	259
Queen of Angels Hospital [1-3]	Los Angeles	C. Mouton	1,309	29	3	6	275
University of California Hospital [1-3]	Los Angeles	J. M. Adams	3,064	95	2	9	229
White Memorial Hospital [1-3]	Los Angeles	R. F. Chinnock	648	24	2	3	215
Children's Hospital of the East Bay [1-3]	Oakland, Calif.	H. Long	7,584	...	6	12	225
[illegible] ospital [1-3]	Oakland, Calif.	M. Schwartz	1,505	24	2	3	200
[illegible] [1-3]	Oakland, Calif.	A. L. King	769	11	4	6	315
[illegible] Associated Hospitals Center	*Palo Alto, Calif.*	N. Kretchmer	...	...	4	11	175
Children's Hospital [1-3]	San Francisco	H. E. Thelander	1,604	17	2	4	175
[illegible] ous Diseases		....	...	...	..	..	...
[illegible] ital [1-3]	San Francisco	J. G. Smillie	819	6	2	4	200
[illegible]	San Francisco	L. E. Hardgrave	1,984	15	1	2	325
[illegible] Hospitals [1]	San Francisco	H. B. Bruyn	605	4	5	5	220
[illegible]	San Francisco	E. B. Shaw	1,688	54	5	10	231
Santa Clara County Hospital [1-3]	San Jose, Calif.	R. D. Cutter	500	13	1	2	250
St. John's Hospital [1]	Santa Monica, Calif.	A. B. Polson	1,655	7	3	3	225
San Joaquin General Hospital [1]	Stockton, Calif.	F. Ruhstaller	876	8	1	2	260
Harbor General Hospital [1]	Torrance, Calif.	A. J. Moss	1,259	35	3	6	259

Numerical and other references will be found on pages 788 through 790.

18. PEDIATRICS–Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered[8]	Total Residencies Offered[8]	Beginning Stipend (Month)
Gorgas Hospital [1]	Ancon, C. Z.	D. Hirschl	1,127	13	1	2	390
Children's Hospital [1-3]	Denver	W. S. Davis	5,508	90	6	10	200
University of Colorado Medical Center							
Colorado General Hospital [1-3]	Denver	C. H. Kempe	697	48	8	22	180
Denver General Hospital [1-3]	Denver	C. H. Kempe	646	23	..	..	179
Hartford Hospital [1-3]	Hartford, Conn.	J. B. Griggs	1,925	23	1	2	125
St. Francis Hospital [1-3]	Hartford, Conn.	T. F. Murphy	985	11	2	4	175
Yale-New Haven Medical Center							
Grace-New Haven Community Hospital [1-3]	New Haven, Conn.	N. K. Ordway, W. R. Wilson	5,803	136	4	9	50
Hospital of St. Raphael [3]	New Haven, Conn.	P. F. McAlenney	2,136	11	3	4	150
Delaware Hospital [1-3]	Wilmington, Del.	R. O. Y. Warren	2,157	30	2	4	220
Children's Hospital [1-3]	Washington, D. C.	R. H. Parrott	3,801	84	14	30	200
District of Columbia							
General Hospital [1-3]	Washington, D. C.	T. Reichelderfer	2,276	57	5	10	233
Georgetown University Hospital [1-3]	Washington, D. C.	F. G. Burke	1,505	34	4	7	175
Duval Medical Center [1-3]	Jacksonville, Fla.	J. K. David, Jr.	518	18	2	4	200
St. Vincent's Hospital			.....	...	..	..	...
Jackson Memorial Hospital [1-3]	Miami, Fla.		1,932	49	5	11	200
Crawford W. Long Memorial Hospital [1-3]	Atlanta, Ga.		1,562	59	5	6	285
Georgia Baptist Hospital [1-3]	Atlanta, Ga.		3,881	13	3	5	305
Grady Memorial Hospital [1]	Atlanta, Ga.		1,819	58	4	10	100
St. Joseph's Infirmary [1-3]	Atlanta, Ga.		1,363	7	1	2	270
Medical College of Georgia Hospitals							
Eugene Talmadge Memorial Hospital [1-3]	Augusta, Ga.	V. C. Vaughan	388	28	5	10	250
University Hospital [1-3]	Augusta, Ga.	P. Ellington	1,854	17	1	2	200
Kauikeolani Children's Hospital [1-3]	Honolulu, Hawaii	D. F. B. Char	4,880	31	3	7	200
Children's Memorial Hospital [1-3]	Chicago	J. A. Bigler	3,317	74	14	18	75
Cook County Hospital	Chicago	H. N. Sanford	9,020	348	9	18	140
Department [illegible]		A. Hoyne	997	22	1	1	140
Loyola Univers[illegible]							
of Medicine)							
Mercy Hospital [1-3-33]	Chicago	W. G. Eighammer	1,490	23	5	12	225
Michael Reese Hospital [1-3]	Chicago	J. Metcoff	3,604	161	7	15	125
Mount Sinai Hospital [1-3]	Chicago	I. M. Levin	2,652	55	2	3	225
Presbyterian-St. Luke's Hospital [1-3-411]	Chicago	W. R. Dammers	2,100	50	2	4	125
Provident Hospital [1-3]	Chicago	C. J. Runner	924	16	1	2	200
University of Chicago Clinics [1-3]	Chicago	F. H. Wright	1,315	62	7	14	200
University of Illinois Research and							
Educational Hospitals [1-3]	Chicago	H. N. Sanford	1,624	59	4	8	145
St. Francis Hospital [1-3]	Evanston, Ill.	J. B. Murphy	1,026	25	1	2	260
Little Company of Mary Hospital [1-3]	Evergreen Park, Ill.	A. W. Fleming	3,884	21	3	6	200
Indiana University Medical Center							
Indiana University Medical							
Center Hospital [1]	Indianapolis	L. T. Meiks	1,177	121	5	8	225
Marion County General Hospital [1-3]	Indianapolis	H. F. Call	721	23	2	4	210
Riley Hospital	Indianapolis	....	....	...	..	..	...
Methodist Hospital [1]	Indianapolis	P. Hedrick	2,264	19	1	2	278
St. Vincent's Hospital [1-3]	Indianapolis	H. Stadler	584	39	1	2	275
Iowa Methodist Hospital [1-3]	Des Moines, Iowa	L. F. Hill	5,114	70	4	8	200
State University of Iowa Hospitals [1-3]	Iowa City	W. W. McCrory	1,775	64	4	10	175
University of Kansas Medical Center [1-3]	Kansas City, Kan.	H. Miller	1,206	43	4	8	125
St. Joseph Infirmary [1]	Louisville, Ky.	M. Limper	3,278	31	2	4	210
University of Louisville Medical Center							
Children's Hospital	Louisville, Ky.	J. A. Little	4,652	80	11	16	83
Louisville General Hospital [1-3]	Louisville, Ky.	W. C. Adams	622	13	6	11	83
Charity Hospital of Louisiana							
Louisiana State University Unit [1]	New Orleans	R. L. Fowler	2,986	114	7	14	100
Tulane University Unit [1]	New Orleans	R. V. Platou	2,817	93	8	16	100
Confederate Memorial							
Medical Center [1-3]	Shreveport, La.	C. H. Webb	3,030	60	2	4	125
Baltimore City Hospitals [1-3]	Baltimore	H. E. Harrison	1,786	185	3	9	75
Johns Hopkins Hospital [1-3]	Baltimore	R. E. Cooke	1,031	154	12	20	25
Sinai Hospital [1-3]	Baltimore	H. H. Gordon	935	20	3	8	110
University Hospital [1]	Baltimore	....	.....	...	..	..	...
Boston City Hospital [1]	Boston	S. S. Gellis	2,366	106	13	19	132
Boston Floating Hospital [1-3]	Boston	J. M. Baty	3,249	78	5	10	229
Children's Medical Center [1-3]	Boston	C. A. Janeway	3,283	233	4	21	42
Massachusetts General Hospital [1-3]	Boston	A. M. Butler	1,109	...	..	..	67
St. Vincent Hospital [1-3]	Worcester, Mass.	P. Karpawich	3,340	7	1	2	175
Worcester City Hospital [1-3]	Worcester, Mass.	R. Cox	1,071	9	1	2	250
University Hospital [1-3]	Ann Arbor, Mich.	J. L. Wilson	1,593	92	9	24	160
Children's Hospital [1-3]	Detroit	P. V. Woolley	4,751	153	14	31	225
Harper Hospital [1-3]	Detroit	E. E. Martmer	1,416	39	4	8	275
Henry Ford Hospital [1-3]	Detroit	J. A. Johnston	1,398	14	4	8	265
Hurley Hospital [1-3]	Flint, Mich.	E. M. Eichhorn	4,265	36	2	4	325
Butterworth Hospital [1-3]	Grand Rapids, Mich.	D. F. Waterman	1,417	48	1	2	300
St. Joseph Mercy Hospital [1-3]	Pontiac, Mich.	F. Adams	4,538	29	1	2	375
Saginaw General Hospital [1-3]	Saginaw, Mich.	R. M. Heavenrich	1,927	17	1	2	365
Minneapolis General Hospital [1-3]	Minneapolis	R. B. Raile	1,677	36	3	4	220
Northwestern Hospital [1-3]	Minneapolis	N. Beach	3,733	32	1	2	200
University of Minnesota Hospitals [1-3]	Minneapolis	J. A. Anderson	2,515	145	8	16	220
Mayo Foundation [1]	Rochester, Minn.	J. W. DuShane	4,063	84	6	18	175
University Hospital [1-3]	Jackson, Miss.	B. Batson	1,203	44	3	5	250
University of Missouri Medical Center [1-3]	Columbia, Mo.	R. L. Jackson	708	26	2	5	200
Children's Mercy Hospital [1-3]	Kansas City, Mo.	H. C. Miller	2,556	34	6	12	175
Kansas City General Hospital [1-3]	Kansas City, Mo.	G. E. Hughes	4,250	66	2	4	220
Homer G. Phillips Hospital [1-3]	St. Louis	P. J. White	2,680	28	9	20	235
St. Louis Children's Hospital [1-3]	St. Louis	A. F. Hartmann, Sr.	4,888	146	16	30	50
St. Louis City Hospital [1-3-238]	St. Louis	V. Peden	2,277	27	5	11	234
St. Mary's Group of Hospitals [1-3]	St. Louis	J. P. King	4,635	91	6	12	100
Children's Memorial Hospital [1-3]	Omaha, Neb.	J. H. Murphy	4,238	44	4	8	275
Creighton Memorial—St. Joseph's Hospital [1-3]	Omaha, Neb.	J. H. Murphy	2,557	11	1	3	210
Contagious Division of County Hospital		....	.....	..	..	..	...
Omaha Children's Hospital		....	.....	..	..	..	...
Riverview Home		....	.....	..	..	..	...
St. Joseph's Orphanage		....	.....	..	..	..	...

Numerical and other references will be found on pages 788 through 790.

18. PEDIATRICS—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Monthly)
University of Nebraska Hospital [1-8]	Omaha, Neb.	G. Gibbs	590	20	2	5	200
Mary Hitchcock Memorial Hospital [1-8]	Hanover, N. H.	C. C. Stewart	993	20	1	2	218
Jersey City Medical Center [1-8]	Jersey City, N. J.	B. P. Abrams	1,427	15	3	6	168
Fitkin Memorial Hospital [1-8]	Neptune, N. J.	J. F. Raffetto	1,548	11	1	2	250
Newark Beth Israel Hospital [1-8]	Newark, N. J.	A. Heyman	1,709	6	1	2	100
St. Michael's Hospital [1-8]	Newark, N. J.	H. A. Murray	2,841	26	3	6	165
United Hospitals of Newark							
Babies Hospital [1-8]	Newark, N. J.	W. L. Mitchell	3,397	23	3	7	150
Bernalillo County-Indian Hospital [1-8]	Albuquerque, N. Mex.	L. F. Kuehn	995	31	1	2	350
Albany Hospital [1-8]	Albany, N. Y.	P. Patterson	1,234	30	3	6	100
Beth El Hospital [1-8]	Brooklyn, N. Y.	B. Schick	341	36	3	4	150
Brooklyn Hospital [1-8]	Brooklyn, N. Y.	T. M. Lamb	1,085	14	2	4	175
Coney Island Hospital [1-8]	Brooklyn, N. Y.	S. Nussbaum	880	18	2	4	145
Cumberland Hospital [1-8]	Brooklyn, N. Y.	M. M. Maliner	1,276	14	2	4	147
Jewish Hospital [1-8]	Brooklyn, N. Y.	J. Pincus	1,578	26	8	14	100
Kings County Hospital Center	Brooklyn, N. Y.	R. L. Day	3,595	73	10	22	145
Long Island College Hospital [1-8]	Brooklyn, N. Y.	C. A. Weymuller	746	7	..	3	156
Lutheran Medical Center [1-8]	Brooklyn, N. Y.	J. A. Monfort	811	27	1	2	135
Maimonides Hospital [1-8]	Brooklyn, N. Y.	B. Krámer	799	17	3	6	75
Methodist Hospital [1-8]	Brooklyn, N. Y.	W. R. Coles	428	17	1	2	175
St. Catherine's Hospital [1-8]	Brooklyn, N. Y.	J. P. Lombard	596	6	1	2	125
St. John's Episcopal Hospital [1-8]	Brooklyn, N. Y.	B. H. Shulman	536	16	1	2	175
St. Mary's Hospital [1-8]	Brooklyn, N. Y.	A. G. Stigliano	538	31	1	2	200
Children's Hospital [1-8]	Buffalo	M. I. Rubin	3,848	105	11	22	125
Edward J. Meyer Memorial Hospital [1-8]	Buffalo	T. S. Bumbalo	1,229	25	2	5	247
Mary Imogene Bassett Hospital [1-8]	Cooperstown, N. Y.	T. C. Goodwin	338	16	1	1	200
City Hospital at Elmhurst [1-8]	Elmhurst, N. Y.	E. E. Amerman	1,411	10	3	5	145
Meadowbrook Hospital [1-8]	Hempstead, N. Y.	E. A. Stanchi	1,778	72	3	6	225
Queens Hospital Center [1-8]	Jamaica, N. Y.	M. Coe	1,457	76	4	7	145
Charles S. Wilson Memorial Hospital [1-8]	Johnson City, N. Y.	A. M. Coddington	2,513	9	1	2	225
North Shore Hospital [1-8]	Manhasset, N. Y.	A. L. Florman	378	3	2	3	200
Long Island Jewish Hospital [1-8]	New Hyde Park, N. Y.	S. Karelitz	2,107	67	2	5	75
Bellevue Hospital Center							
Div. III—New York University College of Medicine [1-8-424]	New York City	L. E. Holt, Jr.	1,442	69	18	28	145
Beth Israel Hospital [1-8]	New York City	P. Cohen	292	3	1	2	160
Bronx Hospital [1-8]	New York City	J. H. Lapin	786	9	2	3	100
Bronx Municipal Hospital Center [1-8]	New York City	H. L. Barnett	1,661	37	10	25	145
Fordham Hospital [1-8]	New York City	J. Golomb	602	10	2	3	145
Harlem Hospital [1-8]	New York City	H. J. Cohen	965	16	2	4	145
Lenox Hill Hospital [1-8]	New York City	A. Anderson	900	11	1	2	180
Lincoln Hospital [1-8]	New York City	H. L. Barnett	1,487	77	7	11	145
Morrisania City Hospital [1-8]	New York City	F. E. Chick	820	48	2	4	145
Mount Sinai Hospital [1-8]	New York City	H. L. Hodes	2,470	94	4	9	75
New York Hospital [1-8]	New York City	S. Z. Levine	2,171	128	7	16	164
New York Infirmary [1-8]	New York City	B. Worcester	316	4	1	2	150
New York Medical College—Metropolitan Medical Center		L. B. Slobody	.....	...	..	..	...
Flower and Fifth Avenue Hospitals [1-8]	New York City		912	25	2	4	125
Metropolitan Hospital [1-8]	New York City		1,895	38	6	12	145
New York Polyclinic Medical School and Hospital [1-8]	New York City	A. B. Susman	843	1	1	2	125
New York University—Bellevue Medical Center							
University Hospital [1-8]	New York City	L. E. Holt	514	10	2	3	105
Presbyterian Hospital (Babies Hospital) [1]	New York City	R. McIntosh	5,583	185	8	19	250
Roosevelt Hospital [8]	New York City	E. N. Joyner, III	634	6	4	5	133
St. Luke's Hospital [1-8]	New York City	J. F. Eagle	489	9	3	6	100
St. Vincent's Hospital [1-8]	New York City	A. J. Vignec	4,768	20	3	5	125
Genesee Hospital [8]	Rochester, N. Y.	J. Glaser	1,795	4	1	2	150
Rochester General Hospital [1-8-366]	Rochester, N. Y.	E. H. Townsend, Jr.	817	8	2	4	150
St. Mary's Hospital [1-8]	Rochester, N. Y.	R. Sommers	1,241	6	1	2	225
Strong Memorial—Rochester Municipal Hospital [1-8-307]	Rochester, N. Y.	W. L. Bradford	1,738	76	6	17	117
State University of New York							
Upstate Medical Center [1-8]	Syracuse, N. Y.	J. B. Richmond	5,470	56	6	13	233
Grasslands Hospital [1-8]	Valhalla, N. Y.	D. A. Wilcox	321	9	1	3	175
North Carolina Memorial Hospital [1-8]	Chapel Hill, N. C.	E. C. Curnen	2,182	87	4	10	175
Charlotte Memorial Hospital [1]	Charlotte, N. C.	C. G. Watkins	594	8	1	2	295
Duke Hospital [1-8-177]	Durham, N. C.	J. Harris	1,322	71	12	21	102
Rex Hospital [1]	Raleigh, N. C.	C. R. Bugg	2,670	10	1	2	350
North Carolina Baptist Hospital [1-8]	Winston-Salem, N. C.	W. Kelsey	1,684	49	3	7	166
Mary Day Nursery and Children's Hospital [1]	Akron, Ohio	N. Miller	4,316	77	4	10	250
University of Cincinnati College of Medicine Hospital Group							
Children's Hospital [1]	Cincinnati	A. A. Weech	8,383	141	12	25	100
Cincinnati General Hospital [1-8]	Cincinnati	A. A. Weech	848	63	..	..	...
Cleveland Clinic Hospital [1-8]	Cleveland	R. D. Mercer	679	16	2	5	250
Cleveland Metropolitan General Hospital [1-8-334]	Cleveland	F. C. Robbins	688	51	5	12	150
Department of Contagious Diseases		F. C. Robbins	548	30	..	..	...
St. Luke's Hospital [1-8]	Cleveland	R. G. Hodges	1,233	30	2	3	200
University Hospitals [1-8]	Cleveland	W. Wallace	3,032	101	4	11	125
Children's Hospital [1-8]	Columbus, Ohio	E. H. Baxter	4,880	178	12	28	175
University of Oklahoma Medical Center		H. D. Riley	.....	...	5	12	...
University Hospital [1-8-352]	Oklahoma City		1,235	79	..	..	200
Hillcrest Medical Center [1]	Tulsa, Okla.	R. M. Wadsworth	1,085	9	2	4	200
St. John's Hospital [1]	Tulsa, Okla.	D. J. Underwood	4,994	25	1	2	175
University of Oregon Medical School Hospitals and Clinics [1-8]	Portland, Ore.	A. J. Hill Jr.	1,293	89	4	8	125
Geo. F. Geisinger Memorial Hospital [1-8]	Danville, Pa.	S. S. Morrison	771	14	1	2	175
Harrisburg Hospital [1-8]	Harrisburg, Pa.	R. J. Tursky	2,394	12	1	2	250
Harrisburg Polyclinic Hospital [1]	Harrisburg, Pa.	M. D. Ames	2,857	20	1	2	250
Albert Einstein Medical Center [1-8]	Philadelphia	A. Capper	918	20	1	3	125
Children's Hospital [1-8]	Philadelphia	J. Stokes, Jr.	6,049	70	9	22	50
Germantown Dispensary and Hospital [1-8]	Philadelphia	J. C. Williams	1,478	6	2	2	175
Graduate Hospital of the University of Pennsylvania [1-8]	Philadelphia	J. A. Ritter	394	5	1	1	100
Hahnemann Medical College and Hospital [1-8-421]	Philadelphia	C. C. Fischer	2,823	64	4	8	75

Numerical and other references will be found on pages 788 through 790.

18. PEDIATRICS—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
Hospital of the University of Pennsylvania [1-3]	Philadelphia	L. Barness	2,122	7	3	6	50
Hospital of the Woman's Medical College of Pennsylvania [1-3]	Philadelphia	E. E. Miller	697	23	1	3	110
Jefferson Medical College Hospital [1-3]	Philadelphia	H. G. Keitel	970	15	3	11	100
Philadelphia General Hospital [1-3]	Philadelphia	P. Gyorgy	3,148	39	5	9	121
Temple University Hospitals							
St. Christopher's Hospital for Children [1-3]	Philadelphia	W. E. Nelson	4,104	75	10	23	50
Temple University Hospital	Philadelphia		.....	...	..	..	...
Allegheny General Hospital [1-3]	Pittsburgh	J. W. Leech	951	11	1	2	200
Health Center Hospitals of the University of Pittsburgh School of Medicine							
Children's Hospital [1-3]	Pittsburgh	S. S. Stevenson	1,600	59	10	21	125
Robert Packer Hospital [1-3]	Sayre, Pa.	D. S. Motsay	2,651	25	1	2	225
Bayamon Charity District Hospital [1-3]	Bayamon, P. R.	E. Matta	1,936	68	2	5	250
San Juan City Hospital [1-3]	San Juan, P. R	A. Ortiz	1,484	54	4	10	175
Rhode Island Hospital [1-3]	Providence, R. I.	B. Feinberg	.....	...	2	4	125
Teaching Hospitals of the Medical College of South Carolina [1]	Charleston, S. C.	J. R. Paul, Jr.	2,156	51	3	7	137
Medical College Hospital			.....	...	..	..	...
Roper Hospital			.....	...	..	..	...
Columbia Hospital of Richland County [1]	Columbia, S. C.	J. R. Harvin	4,861	63	1	2	175
University of Tennessee Memorial Research Center and Hospital [1]	Knoxville, Tenn.	H. Christian	671	14	1	2	320
City of Memphis Hospitals [1-3]	Memphis	F. T. Mitchell	2,215	88	5	12	150
Le Bonheur Children's Hospital [1-3-388]	Memphis	C. B. Etter	5,387	42	4	6	125
Baptist Hospital [1-3]	Nashville, Tenn.	J. M. Strayhorn	1,830	11	2	4	325
George W. Hubbard Hospital [1-3]	Nashville, Tenn.	E. P. Crump	792	45	2	6	125
Vanderbilt University Hospital [1-3]	Nashville, Tenn.	A. Christie	1,118	14	4	6	50
Driscoll Foundation Children's Hospital [1-3]	Corpus Christi, Texas	C. L. Conecklin	1,138	82	2	7	200
Children's Medical Center [1-3]	Dallas, Texas	E. Pratt	2,181	34	8	16	150
St. Paul's Hospital [1-3]	Dallas, Texas	W. C. Hawkins	2,646	14	2	4	150
University of Texas Medical Branch Hospitals [1-3]	Galveston, Texas	A. Hansen	1,163	78	6	14	160
Baylor University College of Medicine Affiliated Hospitals							
Hermann Hospital [1-3]	Houston, Texas	R. J. Blattner	839	32	3	6	125
Jefferson Davis Hospital [1-3]	Houston, Texas	R. Blattner	1,438	121	6	12	83
Methodist Hospital [1-3]	Houston, Texas	E. B. Brandes	92	1	1	2	220
Texas Children's Hospital [1-3]	Houston, Texas	R. J. Blattner	2,765	67	3	7	100
St. Joseph's Hospital [3]	Houston, Texas	R. D. Lomas	4,664	26	1	2	220
University of Texas Postgraduate School of Medicine Affiliated Hospitals							
Robert B. Green Memorial Hospital [1-3]	San Antonio, Texas	C. B. Alexander, V. Stovall	1,112	78	2	4	150
Santa Rosa Hospital [1-3]	San Antonio, Texas	M. L. Thornton	3,180	42	1	2	150
Salt Lake County General Hospital [1-3-370]	Salt Lake City	M. E. Lahey	457	8	3	7	220
University of Vermont Affiliated Hospitals							
De Goesbriand Memorial Hospital [1-3]	Burlington, Vt.	J. Lucey	719	4	2	4	200
Mary Fletcher Hospital [1-3]	Burlington, Vt.	R. J. McKay	552	27	1	3	100
Alexandria Hospital [1-3]	Alexandria, Va.		.....	...	..	..	...
ospital [1-3]	Charlottesville, Va.	W. W. Waddell Jr.	942	38	3	5	75
a—							
	Richmond, Va.	C. M. McCue	1,738	73	8	14	75
Affiliated Hospitals							
ospital [1-3]	Seattle	J. Docter	3,316	94	4	9	160
Unit No. 1 (Harborview) [1-3]	Seattle	R. A. Aldrich	903	27	8	16	150
Beckley Memorial Hospital [1-3]	Beckley, W. Va.	S. J. Winter	233	5	1	2	400
Memorial Hospital [1-3]	Charleston, W. Va.	T. G. Potterfield	1,063	...	1	2	250
University Hospitals [1-3]	Madison, Wis.	N. J. Smith	1,152	54	4	16	100
Milwaukee Children's Hospital [1-3]	Milwaukee	F. J. Mellencamp	4,038	78	6	12	270
Milwaukee County Hospital [1-3]	Milwaukee	M. G. Peterman	2,023	24	3	5	216

Residency programs in the following hospitals have been approved by the Council, the American Academy of Pediatrics and the American Board of Pediatrics, through the Residency Review Committee for Pediatrics, as *offering full training* of two years' duration through affiliation with a fully approved program.

Hospitals, 39; Residencies, 89

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
NONFEDERAL							
Seaside Memorial Hospital [1-3-88]	Long Beach, Calif.	M. P. Baecker	2,242	11	1	1	275
San Diego County General Hospital [1-3-414]	San Diego, Calif.	H. G. Kellogg	988	11	1	2	250
Mount Zion Hospital [1-3]	San Francisco	S. J. Robinson	1,337	2	1	2	150
Community Hospital of San Mateo County [1]	San Mateo, Calif.	W. C. Layton	126	4	1	1	300
Waterbury Hospital [1-3-124]	Waterbury, Conn.	J. H. Root, Jr.	4,201	29	1	2	225
Variety Children's Hospital [1-3-142]	Miami, Fla.	J. W. Lancaster	3,149	33	4	8	215
Henrietta Egleston Hospital for Children [1-3-144]	Atlanta, Ga.	M. H. Roberts	989	11	1	2	150
Grant Hospital [1-3-150]	Chicago		.....	...	..	..	...
Illinois Masonic Hospital [1-3-153]	Chicago	M. R. Jackson	2,187	30	3	3	115
Evanston Hospital [1-3-155]	Evanston, Ill.	A. L. Newcomb	1,559	1	1	2	225
St. Francis Hospital [1-158]	Peoria, Ill.		.....	...	..	..	...
Hotel Dieu-Sister's Hospital [1-3-415]	New Orleans	H. Tolmas	2,496	8	2	3	225
Southern Baptist Hospital [1-3-415]	New Orleans	B. C. Mason	2,127	5	1	2	225
Touro Infirmary [1-173]	New Orleans		.....	...	..	..	...
Central Maine General Hospital [1-194]	Lewiston, Maine	H. C. Thacher	515	9	1	1	225
Mercy Hospital [1-3-186]	Baltimore	F. B. Smith	548	9	1	2	275
Provident Hospital and Free Dispensary [1-3-186]	Baltimore	C. R. Campbell	614	10	2	4	225
Springfield Hospital [1-257]	Springfield, Mass.	H. H. Shuman	844	15	1	2	125
Herman Kiefer Hospital [1-3-18]	Detroit	D. C. Young	1,436	19	3	3	554
Receiving Hospital [1-3-216]	Detroit	C. F. Whitten	3,772	22	1	2	303

Numerical and other references will be found on pages 788 through 790.

18. PEDIATRICS—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered *	Total Residencies Offered *	Beginning Stipend (Month)
Cooper Hospital [1-3-355]	Camden, N. J.	V. Del Duca	2,123	9	..	..	83
Monmouth Medical Center [1-3-429]	Long Branch, N. J.	.....	.....	...	..	..	...
St. Francis Hospital [1-3-416]	Trenton, N. J.	H. Davis	4,503	23	1	1	216
St. Peter's Hospital [3-417]	Albany, N. Y.	H. F. Leahy	1,631	12	2	3	225
Wyckoff Heights Hospital [1-3-284]	Brooklyn, N. Y.	V. Larkin	478	16	3	6	100
Flushing Hospital and Dispensary [1-3-276]	Flushing, N. Y.	H. T. Vogel	615	43	1	2	175
Mary Immaculate Hospital [1-3-276]	Jamaica, N. Y.	A. A. Trivilino	566	9	1	2	160
Misericordia Hospital [1-3-418]	New York City	F. Castrovinci	493	9	1	3	125
Watts Hospital [1-3-419]	Durham, N. C.	A. H. London	1,088	2	1	3	300
Babies Hospital [1-3]	Wilmington, N. C.	J. B. Sidbury	2,315	7	2	2	300
Good Samaritan Hospital [1-3-322]	Cincinnati	N. W. Ryan	3,042	17	1	2	250
Jewish Hospital [1-3-318]	Cincinnati	J. I. Klein	2,268	..	1	2	195
Mount Sinai Hospital [1-3-334]	Cleveland	.....	.....	...	..	..	...
Mercy Hospital [1-3-218]	Toledo, Ohio	J. J. Tansey	2,084	9	1	1	275
Trumbull Memorial Hospital [1-3-327]	Warren, Ohio	R. P. Ostergard	2,298	8	1	2	300
Charles V. Chapin Hospital [1-3-208]	Providence, R. I.	M. Adelman	1,343	7	3	6	150
Greenville General Hospital [1-3-369]	Greenville, S. C.	J. Ott	1,464	18	..	1	300
T. C. Thompson Children's Hospital [1-3-144]	Chattanooga, Tenn.	G. C. Gibson, Jr.	3,308	48	4	7	325
Baptist Memorial Hospital [1-3-420]	Memphis	G. S. Lovejoy	2,919	10	1	2	260
St. Joseph Hospital [1-3-420]	Memphis	H. Jacobson	1,864	10	1	2	325

19. PHYSICAL MEDICINE AND REHABILITATION

Residency programs in the following hospitals have been approved by the Council and the American Board of Physical Medicine and Rehabilitation, through the Residency Review Committee for Physical Medicine and Rehabilitation, as offering acceptable training in the specialty.

Hospitals 71; Residencies, 258

Name of Hospital	Location	Chief of Service	Inpatients Treated	Number of Treatments	First Year Residencies Offered 8	Total Residencies Offered 8	Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES ARMY								
Letterman Army Hospital [1-3]	San Francisco	W. H. Moore, Jr.	4,471	107,342	1	3	3	...
Fitzsimons Army Hospital [1-3]	Denver	B. L. Miller	15,484	124,715	1	3	3	...
Army Medical Center [1-3]	Washington, D. C.	A. Mastellone	4,185	184,944	1	3	3	...
NONFEDERAL AND VETERANS ADMINISTRATION								
Los Angeles County Hospital [1]	Los Angeles	E. Austin	12,331	28,841	1	3	3	259
Veterans Admin. Hospital [1-3]	Los Angeles	K. H. Haase	11,400	123,849	2	6	3	270
White Memorial Hospital [1-3]	Los Angeles	F. B. Moor	4,319	21,598	1	3	3	215
University of California Hospitals [1]	San Francisco	G. Bard	13,602	19,729	3	3	3	231
Kaiser Founc California			......	....	..	..	3	...
University of ·			......	....	..	..	3	...
Colorado G		J. Gersten	2,350	30,534	2	6	..	180
Veterans Admin. Hospital [1-3]	Denver	C. C. Hoffman	2,394	31,340	1	2	..	254
Yale-New Haven Medical Center Grace-New Haven Community Hospital [1-3]	New Haven, Conn.	T. F. Hines	1,300	34,773	1	3	3	50
State of Connecticut Veterans Home and Hospital [1-3]	Rocky Hill, Conn.		684	91,330	3	3	3	300
District of Columbia General Hospital [1-3]	Washington, D. C.	J. Buchanan	6,992	65,167	1	1	3	233
Georgetown University Hospital [1-3]	Washington, D. C.	C. D. Shields	265	1,496	1	1	3	250
George Washington University Hospital [1-3]	Washington, D. C.	C. S. Wise	3,003	15,399	1	3	3	150
Veterans Admin. Hospital [1-3]	Coral Gables, Fla.	J. W. Gibson	2,760	47,664	2	6	3	250
Georgia Warm Springs Foundation [1-3]— Emory University Hospital	Warm Springs, Ga.	R. L. Bennett	1,701	243,941	2	6	3	300
Michael Reese	Chicago		......	....	..	..	3	...
Northwestern	Chicago		......	....	..	..	3	...
Veterans Adı	Chicago	L. B. Newman	1,003	46,158	2	2	..	271
Veterans Admin. West Side Hospital [1-3-423]	Chicago		......	....	..	..	3	...
Veterans Admin. Hospital [1-3]	Hines, Ill.	W. T. Liberson	......	....	..	..	3	...
Institute of Physical Medicine and Rehabilitation [1-3-34]	Peoria, Ill.		2,599	22,280	2	6	3	375
University of Kansas Medical Center [1-3]	Kansas City, Kan.	D. Rose	2,259	38,918	1	3	3	125
Veterans Admin. Hospital [1-3]	Kansas City, Mo.	R. R. Beatty	3,035	51,464	..	..	..	271
University of Louisville Medical Center Louisville General Hospital [1-3]	Louisville, Ky.	R. O. McMorris	112	16,335	2	3	3	300
Massachusetts General Hospital [1-3]	Boston	A. L. Watkins	1,606	38,082	..	..	3	67
Veterans Admin. Hospital [1-3-207]	Boston (Jamaica Plain)	F. Friedland	2,918	136,480	1	3	3	271
University Hospital [1-3-215]	Ann Arbor Mich.	J. W. Rae, Jr.	7,527	30,109	2	6	3	160
Elizabeth Kenny Institute	Minneapolis		......	....	..	..	3	...
University of Minnesota Affiliated Hospitals			......	....	..	..	3	...
University Hospital [1-3]	Minneapolis	F. J. Kottke	2,971	121,629	4	14	..	270
Veterans Admin. Hospital [1-3]	Minneapolis	B. S. Troedsson	7,056	114,985	3	3	..	271
Mayo Foundation [1]	Rochester, Minn.	E. C. Elkins	17,656	107,444	3	9	3	175
Mary Hitchcock Memorial Hospital [1-3]	Hanover, N. H.	T. P. Anderson	14,142	34,445	1	3	3	218
Veterans Admin. Hospital [1-3-253]	East Orange, N. J.	C. R. Brook	2,034	111,390	2	2	3	270
Veterans Admin. Hospital [1]	Albany, N. Y.	J. Ehrlich	2,501	110,088	..	1	3	271
Coney Island Hospital [1-3]	Brooklyn, N. Y.		......	....	..	..	3	145
Jewish Chronic Disease Hospital [1-3]	Brooklyn, N. Y.	J. B. Rogoff	599	81,479	..	4	3	200
State University of New York—Downstate Medical Center Kings County Hospital Center [1-3]	Brooklyn, N. Y.		......	....	..	..	3	145
Bellevue Hospital Center Div. III—New York University College of Medicine [1-3-259]	New York City	H. Rusk	17,122	111,873	..	15	3	145
Hospital for Joint Diseases [1-3]	New York City	A. S. Russek	2,086	22,856	..	..	..	80
Bronx Municipal Hospital Center [1-3]	New York City	A. S. Abramson	1,350	104,377	3	9	3	145
Goldwater Memorial Hospital [1-3]	New York City	M. Dacso	2,896	91,463	1	3	3	145

Numerical and other references will be found on pages 788 through 790.

19. PHYSICAL MEDICINE AND REHABILITATION—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Number of Treatments	First Year Residencies Offered *	Total Residencies Offered *	Length of Approved Program (Years)	Beginning Stipend (Month)
Montefiore Hospital [1-3]	New York City	K. Harpuder	4,231	48,039	1	3	3	187
Mount Sinai Hospital [1-3]	New York City	W. Bierman	7,690	34,950	1	1	3	75
New York Medical College—Metropolitan Medical Center			......	....	..	..	3	...
Bird S. Coler Memorial Hospital and Home [3]	New York City	J. S. Tobis	1,103	99,765	10	19	..	145
Metropolitan Hospital [1-3]	New York City	J. S. Tobis	2,220	74,073	1	8	..	145
Presbyterian Hospital [1]	New York City	R. C. Darling	51,788	89,789	..	5	3	308
Veterans Admin. Hospital (Bronx) [1-3]	New York City	A. Ebel	4,296	344,723	3	7	3	271
Veterans Admin. Hospital (Manhattan) [1-3]	New York City	B. Stoll	2,878	204,827	2	3	3	271
Veterans Admin. Hospital [1-3]	Durham, N. C.	H. T. Zankel	1,421	40,872	1	1	3	270
Cleveland Clinic Hospital [1-3]	Cleveland	P. A. Nelson	5,994	24,559	1	3	3	235
Highland View-Cuyahoga County Hospital [1-3]	Cleveland	M. Peszczynski	5,350	85,527	3	6	3	192
Ohio State University Hospitals								
University Hospital [1-3]	Columbus, Ohio	R. D. Burk, E. Johnson	2,277	47,635	2	6	3	177
Veterans Admin. Hospital [1-3]	Dayton, Ohio	L. Rosenberg	1,164	118,301	2	6	3	271
Veterans Admin. Hospital [1-3]	Portland, Ore.	E. W. Fowlks	7,034	124,048	1	3	3	824
Hospital of the University of Pennsylvania [1-3]	Philadelphia	W. Erdman	3,494	26,164	2	6	3	...
Philadelphia General Hospital [1-3]	Philadelphia	A. Martucci	10,536	130,673	1	3	3	300
Veterans Admin. Hospital [1-3]	Philadelphia	R. A. Schlesinger	1,754	54,912	2	2	3	270
Veterans Admin. Hospital [1-3]	Pittsburgh	S. Machover	2,121	123,410	..	2	3	271
Veterans Admin. Hospital [1-3]	Memphis	B. B. Sutton	9,277	164,995	1	1	3	271
Baylor University Hospital [3]	Dallas, Texas	E. M. Krusen	36,319	121,181	1	3	3	283
Gonzales Warm Springs Rehabilitation Foundation [1-3-375]	Gonzales, Texas	O. F. Von Werssowetz	1,613	63,580	4	7	1	...
Baylor University College of Medicine Affiliated Hospitals			......	....	..	..	3	...
Veterans Admin. Hospital [1-3]	Houston, Texas	L. A. Leavitt	12,092	169,049	2	6	..	270
Medical College of Virginia—Hospital Division [1-3]	Richmond, Va.	H. W. Park	28,219	70,630	2	6	3	75
Veterans Admin. Hospital [1-3]	Richmond, Va.	A. R. Dawson	6,199	128,166	2	6	3	271
University of Washington			......	......	..	..	3	...
King County Hospital Nc			......	......	..	..	..	...
University Hospital	Seattle		......	......	..	..	..	...
Veterans Admin. Hospital [1-3]	Milwaukee (Wood), Wis.	P A. Dudenhoefer, R. Plaskoski	4,068	277,402	2	8	3	271
Veterans Admin. Hospital [1-3-407]	San Juan, P. R.	H. J. Flax	627	23,626	1	3	3	542

20. PLASTIC SURGERY

Residency programs in the following hospitals have been approved by the Council, the American Board of Plastic Surgery and the American College of Surgeons, through the Residency Review Committee for Plastic Surgery, as offering acceptable training in the specialty.

Hospitals, 63; Residencies, 141

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered *	Total Residencies Offered *	Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES ARMY								
Brooke Army Hospital [1-3]	San Antonio	J. H. Tenery	314	..	1	3	1	...
NONFEDERAL AND VETERANS ADMINISTRATION								
University of California Medical Center			1,483	3	..	3	3	...
University of California Hospital [1-3]	Los Angeles		173	..	..	3	..	229
Veterans Admin. Hospital [1-3]	Los Angeles	G. V. Webster	219	..	..	2	..	412
Collis P. and Howard Huntington Memorial Hospital [1-3]	Pasadena, Calif.	G. V. Webster	294	..	1	3	..	300
Franklin Hospital [1]	San Francisco	H. M. Blackfield	315	..	1	1	2	200
St. Francis Memorial Hospital [1-3]	San Francisco	G. W. Pierce	762	1	1	2	3	300
George Washington University Hospital [1-3]	Washington, D. C.	G. Letterman	351	..	..	2	3	150
University of Illinois Affili		P. W. Greeley	.....	..	..	..	3	...
Presbyterian-St. Luke's			191	..	1	1	..	125
Illinois Research and Ed			280	..	..	1	..	145
Veterans Admin. Hospit			237	1	1	3	..	270
Indiana University Medical Center [1]	Indianapolis		456	4	..	2	2	225
University of Kansas Medical Center [1-3]	Kansas City, Kan.		568	4	1	2	2	125
Johns Hopkins Hospital [1-3]	Baltimore	M. T. Edgerton		Incl. in Surg.	..	3	2	25
St. Joseph Mercy Hospital [1-3]	Ann Arbor, Mich.	R. O. Dingman	383	..	1	2	2	385
Henry Ford Hospital [1-3]	Detroit	R. H. Clifford	522	2	1	2	2	265
Mayo Foundation [1]	Rochester, Minn.	J. B. Erich	2,801	6	4	16	3	175
University of Mississippi Medical Center		J. H. Hendrix, Jr.	.....	..	..	..	3	...
University Hospital [1-3]	Jackson, Miss.		78	5	..	1	..	250
Veterans Admin. Hospital [1-3]	Jackson, Miss.		96	..	..	..	..	271
Kansas City General Hospital [1-3]	Kansas City, Mo.	F. J. McCoy		Incl. in Surg.	1	2	2	220
Barnes Hospital [1-3]	St. Louis	J. B. Brown	1,125	8	8	8	3	50
St. Mary's Group of Hospitals [1-3]	St. Louis	F. F. X. Paletta	229	2	2	4	2	120
Cooper Hospital [1-3-52]	Camden, N. J.	A. W. Von Deilen	.....	..	1	1	2	200
St. Barnabas Medical Center [1-3]	Newark, N. J.	L. A. Peer	907	3	1	3	2	200
Albany Hospital [1-3]	Albany, N. Y.	W. B. Macomber	613	..	1	3	2	160
St. Peter's Hospital	Albany, N. Y.		.....	..	..	..	..	...
Veterans Admin. Hospital	Albany, N. Y.		.....	..	..	..	..	...
Kings County Hospital Center [1-3]	Brooklyn, N. Y.	G. R. O'Brien	712	7	2	4	2	145
Roswell Park Memorial Hospital [1-3-29]	Buffalo		.....	..	..	..	1	...
Meadowbrook Hospital [1-3]	Hempstead, N. Y.	L. R. Rubin	373	2	1	2	2	225
Beth Israel Hospital [1-3]	New York City	A. J. Barsky	259	..	1	2	2	160
Columbia-Presbyterian Medical Center			.....	..	..	..	3	...
Francis Delafield Hospital [1-3]	New York City		.....	..	..	..	...	...
Presbyterian Hospital [1]	New York City	G. F. Crikelair		Incl. in Surg.	2	4	..	266
Mount Sinai Hospital [1]	New York City		.....	..	...	..	3	...
New York Hospital [1-3]	New York City	H. Conway	648	..	1	2	3	206

Numerical and other references will be found on pages 788 through 790.

20. PLASTIC SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered[8]	Total Residencies Offered[8]	Length of Approved Program (Years)	Beginning Stipend (Month)
St. Luke's Hospital [1-3-298]	New York City		.....	..	..	..	2	...
Veterans Admin. Hospital (Bronx) [1-3]	New York City	H. Conway	414	1	2	4	2	412
Strong Memorial-Rochester Municipal Hospital [1-3]	Rochester, N. Y.	R. M. McCormack	417	..	..	2	2	117
State University of New York Upstate Medical Center [1-3]	Syracuse, N. Y.	D. Stark	283	..	..	2	2	233
Duke University Affiliated Hospitals		K. L. Pickrell	.....	..	..	..	3	...
Duke Hospital [1-3]	Durham, N. C.		1,088	16	..	6	..	127
Veterans Admin. Hospital [1-3]	Durham, N. C.		293	2	..	2	..	270
Christ Hospital [1-3]	Cincinnati	J. J. Longacre	191	..	1	2	2	200
Ohio State University Hospitals University Hospital [1-3]	Columbus, Ohio	B. C. Martin	217	..	..	3	2	252
St. Anthony Hospital	Oklahoma City	G. H. Kimball	445	..	1	1	3	300
St. John's Hospital [1]	Tulsa, Okla.	J. W. Kelley	177	..	1	1	2	175
Allentown Hospital [1-3]	Allentown, Pa.	K. M. Marcks	621	2	1	1	2	250
Graduate Hospital of the University of Pennsylvania [1-3]	Philadelphia	P. C. Iverson	125	1	1	1	2	100
Hospital of the University of Pennsylvania [1-3]	Philadelphia	H. Royster	338	..	1	2	2	150
Health Center Hospitals of the University of Pittsburgh								
School of Medicine [1-3]	Pittsburgh	W. L. White	541	2	..	6	2	125
Children's Hospital	Pittsburgh		.....	..	..	..	..	...
Presbyterian-Women's Hospital	Pittsburgh		.....	..	..	..	..	...
Veterans Admin. Hospital	Pittsburgh		.....	..	..	..	..	...
Western Pennsylvania Hospital	Pittsburgh		.....	..	..	..	..	...
Baylor University Hospital [3]	Dallas, Texas	J. T. Mills	910	..	..	1	2	200
University of Texas Medical Branch Hospitals [1-3]	Galveston, Texas	T. G. Blocker, Jr.	1,014	20	2	6	3	160
Baylor University College of Medicine Affiliated Hospitals			.....	..	..	..	2	...
Jefferson Davis Hospital [1-3]	Houston, Texas	S. B. Hardy	201	4	1	2	..	...
Methodist Hospital [1-3]	Houston, Texas	S. B. Hardy	155	..	..	..	..	...
Texas Children's Hospital [1-3]	Houston, Texas	T. D. Cronin	147	..	..	..	..	...
Veterans Admin. Hospital [1-3]	Houston, Texas	S. B. Hardy	244	8	1	2	..	270
University of Texas Postgraduate School of Medicine		C. W. Tennison	.....	..	..	..	3	...
Robert B. Green Memorial Hospital [1-3]	San Antonio, Texas		70	..	1	3	..	150
Santa Rosa Hospital [1-3]	San Antonio, Texas		258	..	1	3	..	200
Dr. W. H. Groves Latter-Day Saints Hospital [1-3]	Salt Lake City	T. R. Broadbent	557	2	1	2	2	350
University Hospitals [1-3]	Madison, Wis.	W. Slaughter	394	3	1	2	2	100

21. PREVENTIVE MEDICINE

AVIATION MEDICINE

The following programs in Aviation Medicine have been approved by the Council and the American Board of Preventive Medicine, through the Residency Review Committee for Preventive Medicine, as offering acceptable training in the specialty.

School	Location	Director		Length of Approved Program (Years)	Beginning Stipend (Month)
UNITED STATES AIR FORCE					
School of Aviation Medicine Hq., Air Materiel Command.	Wright-Patterson Air Force Base, Ohio	W. F. Hall	For information regarding program, write to: Chief, Medical Division Office Surgeon General, U. S. A. F., Washington 25, D. C.	4[1] 1 (3d yr.)	...
School of Aviation Medicine	Brooks Air Force Base, Texas	O. O. Benson, Jr.	For information regarding program, write to: Chief, Medical Division Office Surgeon General, U. S. A. F., Washington 25, D. C.	1 (2d and 3d year)	
UNITED STATES NAVY					
School of Aviation Medicine	Pensacola, Fla.		For information regarding program, write to: Director, Graduate Medical Training Bureau of Medicine and Surgery, U. S. Navy, Washington 25, D. C.	2	
NONFEDERAL					
Ohio State University Medical Center	Columbus, Ohio	W. F. Ashe		3	302

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[1] Includes one year at a school of public health, one year Advanced Course in Aviation Medicine, one year residency, and one year of supervised practice at selected sites.

Numerical and other references will be found on pages 788 through 790.

21. PREVENTIVE MEDICINE—Continued

OCCUPATIONAL MEDICINE

The following educational institutions have been approved by the Council and the American Board of Preventive Medicine, through the Residency Review Committee for Preventive Medicine, for THREE years of training in Occupational Medicine. The academic portion of these residencies will be given in the institutions listed. The in-plant training is being arranged, and the first separate listing of such programs is published in this issue immediately following the list of institutions giving the academic portion.

School	Location	Physician-in-charge
Yale University Department of Public Health	New Haven, Conn.	J. W. Meigs
University of Michigan Medical Center	Ann Arbor, Mich.	S. E. Miller
University of Rochester School of Medicine and Dentistry	Rochester, N. Y.	J. H. Sterner
University of Cincinnati Institute of Industrial Health, Graduate School of Arts and Sciences	Cincinnati	R. A. Kehoe
Ohio State University Medical Center, Department of Preventive Medicine	Columbus, Ohio	W. F. Ashe
University of Pittsburgh, Graduate School of Public Health	Pittsburgh	A. G. Kammer

The following plants and agencies have been approved by the Council and the American Board of Preventive Medicine, through the Residency Review Committee for Preventive Medicine, for ONE year of training to cover the requirement for in-plant training in residencies in Occupational Medicine. For further detailed information concerning a program, it is suggested that the applicant write to the physician in charge of the particular program concerned. Additions to this list will be published in a subsequent issue of THE JOURNAL.

Plant or Agency	Location	Physician-in-charge
Caterpillar Tractor Co.	East Peoria, Ill.	H. A. Vonachen
General Motors Corporation	Detroit, Mich.	S. D. Steiner
New York State Department of Labor, Division of Industrial Hygiene	New York City	M. Kleinfeld
Eastman Kodak Co.	Rochester, N. Y.	J. H. Sterner
National Lead Company of Ohio	Cincinnati, Ohio	J. A. Quigley
Hq., Air Materiel Command..	Wright-Patterson Air Force Base, Ohio	W. F. Hall
Westinghouse Bettis Atomic Power Division	Pittsburgh	R. E. Masters
Allis-Chalmers Manufacturing Co.	West Allis, Wis.	P. J. Whitaker

PUBLIC HEALTH

Residency programs in Public Health in the following states and cities have been approved for training by the Council and the American Board of Preventive Medicine, through the Residency Review Committee for Preventive Medicine.

Department of Health	Location	Director	Local Areas	Population	Length of Approved Program (Years)	Stipend
U. S. Army	6th Army Hdqts. Fort Ord and Presidio of San Francisco, Calif.	G. L. Orth	Military Posts of Fort Ord, Presidio of Monterey, Camp Roberts, Calif.	85,000	1(o)	......
	1st Army Hdqts. Fort Dix, N. J.	G. R. Carpenter	Fort Dix Military Reservation	30,000	1(j)	......
	Governor's Island, N. Y.	G. R. Carpenter	New England, New Jersey & New York	100,000	...	......
State of California	Berkeley	M. H. Merrill	Alameda County	751,300*	2	530
			Berkeley City	117,000*	...	......
			Contra Costa County	370,400*	...	......
			Los Angeles City	2,393,300*	...	......
			Orange County	595,800*	...	......
			San Bernardino County	470,500*	...	......
			San Diego County	943,400*	...	......
			San Mateo County	398,800*	...	......
			Santa Clara County	437,400*	...	......
State of Delaware	Dover	M. H. Mires	Kent and New Castle Counties (a)	203,000*	2	500(b)
State of Florida	Jacksonville	W. T. Sowder	Alachua-Gainesville	67,700*	2	600
			Dade-Miami	875,000*	...	......
			Hillsborough-Tampa	370,000*	...	......
			Palm Beach-West Palm Beach	201,500*	...	
			Pinellas-St. Petersburg	283,100*	...	......
State of Georgia	Atlanta	J. H. Venable	(h)	......	2	......
State of Illinois	Springfield	R. R. Cross	Cook County (c) (d)	1,120,000*	2	500
			Peoria (City) and Peoria County (d) (e)	181,000*	...	......
			Will County (d)	174,600*	...	......
State of Kansas	Topeka	G. Martin	Kansas City-Wyandotte	192,167	2	(f)(r)
			Topeka-Shawnee	110,648	...	......
			Wichita-Sedgwick	250,099	...	......
State of Maryland	Baltimore	E. Davens	Anne Arundel County	188,000*	2	542
			Baltimore City	982,000*	...	......
			Baltimore County	440,000*	...	......
			Harford County	67,000*	...	......
			Montgomery County	291,000*	...	......
			Prince George's County	350,000*	...	......
			Washington County	87,500*	...	......
State of Michigan	Lansing	A. E. Heustis	Wayne County	2,843,890	...	......
			Detroit City	1,920,000	2	400
			Michigan Dept. of Health	(m)	...	......
State of Minnesota	Minneapolis	R. N. Barr, Secy. and Ex. Off.	Minneapolis City	545,200*	2	400
			Olmsted County including Rochester City	52,204*	...	......

21. PREVENTIVE MEDICINE—Continued

Department of Health	Location	Director	Local Areas	Population	Length of Approved Program (Years)	Stipend
State of Mississippi	Jackson	J. A. Milne	Forrest, Perry and Lamar Counties	64,000*	2	325
			Hinds County	170,700*	...	......
New York City	New York City	R. E. Rothermel	(n)	8,010,000	2	413
State of New York	Albany	H. E. Hilleboe	(l)	941,000	2	567
State of North Carolina	Raleigh	J. W. R. Norton	Charlotte-Mecklenburg County	263,300*	2	......
			Forsyth-Winston-Salem	179,400*	...	......
			Halifax	60,900*	...	......
			Orange-Pearson-Chatham-Lee	117,000*	...	......
			Pitt	65,800*	...	......
State of Oklahoma	Oklahoma City	J. W. Shackleford	Pottawatomie-Pontotoc Counties	50,000*	2	419
			Tulsa (City) and Tulsa County	300,000*	...	......
State of Oregon	Portland	H. M. Erickson	Multnomah County (s)	139,730	2	700
			Clackamas County	110,630	...	......
			Jackson County	68,660	...	......
			Lane County	146,640	...	......
State of Pennsylvania	Harrisburg	C. C. Kuehn	(t)	......	...	......
State of Texas	Austin	F. C. Kluth	(g)	4,954,834	2	674(p)
State of Virginia	Richmond	M. I. Shanholtz	Arlington County	159,670*	1	700
State of Washington	Seattle	B. Bucove	Benton-Franklin	94,700*	2	725
			Bremerton-Kitsap	78,400*	...	......
			Clark-Skamania	91,000*	...	......
			King-Seattle	852,700*	...	......
			Spokane City	188,400*	...	......
			Tacoma-Pierce County	318,800*	...	......

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* Estimated.

(a) Excludes the city of Wilmington.

(b) To those planning to work in state.

(c) Excludes Chicago, Evanston, Oak Park, Stickney Township, and Winnetka (including Glencoe, Kenilworth, Northfield, and remainder o New Trier Township), all with full-time health officers.

(d) Assistance can be arranged for securing the MPH degree during or immediately after the first residency year. Appointments can be effecti the first of any month. Appointments normally are limited to those training for service in Illinois. Exceptions may be made in special cases. U. S citizenship and Illinois Medical License required.

(e) Training is given under one director in both the City and County Health Departments.

(f) Arrangements for remuneration made on an individual basis.

(g) 43 city-county or county health departments and 6 city health departments in which training may be given depending upon local conditio and the needs and desires of the resident.

(h) State of Georgia with emphasis on 6 major districts.

(i) Assistance can be arranged for securing the MPH degree after successful completion of residency experience. Appointments will be limited t those training for service in Oregon.

(j) Combined one year program Fort Dix Health Center, Fort Dix., N. J., and Headquarters First U. S. Army, Preventive Medicine Divisio Governor's Island, New York City, for second year of field training.

(l) Training is given in any one of 9 city health departments, 20 county health departments, or 13 district offices within the state.

(m) Training to be with Michigan Department of Health, with field experience in local health departments.

(n) Includes training at Montefiore Hospital.

(o) Combined one year of training, second year of field training, Fort Ord and Presidio of San Francisco, Calif.

(p) Stipend offered only to those residents who plan to remain in public health work in the state at least six years.

(r) Arrangements for remuneration made upon determination of field of interest and location desired.

(s) City of Portland population (402,300) is not included in this 1958 Census estimate.

(t) Assistance can be arranged for securing the MPH degree during or immediately after the first residency year.

22. PROCTOLOGY

Residency programs in the following hospitals have been approved by the Council and the American Board of Proctology, through the Residency Review Committee for Proctology, as offering acceptable training in the specialty.

Hospitals, 13; Residencies, 31

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Length of Approved Program (Years)	Beginning Stipend (Month)
NONFEDERAL AND VETERANS ADMINISTRATION								
White Memorial Hospital $^{1-3}$	Los Angeles	M. R. Hill Sr.	236	3	1	2	2	235
Ochsner Foundation Hospital $^{1-3}$	New Orleans	M. O. Hines	367	21	1	2	2	...
Ferguson, Droste, Ferguson Hospital $^{1-3}$	Grand Rapids, Mich.	J. A. Ferguson	2,027	19	2	4	2	225
University of Minnesota Hospitals $^{1-3}$	Minneapolis	W. Bernstein	Incl. in Surg.		1	2	2	230
Mayo Foundation ^{1}	Rochester, Minn.	R. J. Jackman	800	..	2	4	2	175
Buffalo General Hospital $^{1-3}$	Buffalo	L. S. Knapp	501	2	2	2	2	175
Millard Fillmore Hospital $^{1-3}$	Buffalo	W. H. Bernhoft	274	..	1	2	2	250
Youngstown Hospital $^{1-3}$	Youngstown, Ohio	P. J. Fuzy	637	5	1	2	2	225
Allentown Hospital $^{1-3}$	Allentown, Pa.	G. L. Kratzer	947	7	1	2	2	270
Temple University Hospital $^{1-3}$	Philadelphia	H. E. Bacon	700	7	1	4		...
Health Center Hospitals of the University of Pittsburgh School of Medicine								
Presbyterian Hospital $^{1-3}$	Pittsburgh	K. Zimmerman	514	4	..	2	2	125
Baylor University Hospital ^{3}	Dallas, Texas	C. Rosser	932	..	..	1	2	300
Milwaukee County Hospital $^{1-3}$	Milwaukee	L. J. Schwade	278	2	..	2	2	215

Numerical and other references will be found on pages 788 through 790.

23. PSYCHIATRY

Residency programs in the following hospitals have been approved for THREE years of training by the Council and the American Board of Psychiatry and Neurology, through the Residency Review Committee for Psychiatry and Neurology. (Applicants intending to qualify for examination by the American Board of Psychiatry and Neurology, Inc., should refer to the Board requirements that the candidate have had at least two of the three years of his training in a program or programs approved at the two or three year level—see summary of requirements American Board of Psychiatry and Neurology, Inc., page 835)

Hospitals, 204; Residencies, 3185

Name of Hospital	Location	Chief of Service	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered	Total Residencies Offered	Beginning Stipend (Month)
UNITED STATES ARMY								
Letterman Army Hospital $^{1-3}$	San Francisco	T. Kiersch	12	1,109	1	6	18	...
Army Medical Center $^{1-3}$	Washington, D. C.	W. H. Anderson	..	1,450	...	8	21	...
UNITED STATES NAVY								
U. S. Naval Hospital $^{1-3}$	Oakland, Calif.	M. E. Roudebush	..	1,210	...	3	6	...
U. S. Naval Hospital $^{1-3}$	Bethesda, Md.	J. E. Nardini	..	553	2	2	6	...
UNITED STATES PUBLIC HEALTH SERVICE								
U. S. Public Health Service Hospital $^{1-3-172}$	Lexington, Ky.	T. H. Ainsworth, J. Wellhouse	30	3,661	7	4	12	650
DEPARTMENT OF HEALTH, EDUCATION AND WELFARE								
Freedmen's Hospital $^{1-3}$	Washington, D. C.	E. Y. Williams	..	262	2	2	6	308
St. Elizabeths Hospital $^{1-3}$	Washington, D. C.	W. Overholser	20	8,599	228	8	24	308
NONFEDERAL AND VETERANS ADMINISTRATION								
University of Alabama Medical Center								
Crippled Children's Hospital $^{1-3}$	Birmingham, Ala.	....	..	.....	...	..	..	...
University Hospital and Hillman Clinic $^{1-3}$	Birmingham, Ala.	E. L. Caveny	..	515	1	4	8	250
Veterans Admin. Hospital $^{1-3}$	Birmingham, Ala.	J. R. Jarvis	..	458	1	1	1	271
Arkansas State Hospital	Little Rock, Ark.	....	..	.....	...	..	..	...
University of Arkansas Medical Center $^{1-3}$	Little Rock, Ark	W. G. Reese	..	.....	...	2	6	...
Veterans Admin. Hospital ^{1}	No. Little Rock, Ark.	E. S. Chappell	49	2,793	59	4	12	270
Camarillo State Hospital $^{1-3}$	Camarillo, Calif.	F. H. Garrett	..	10,887	196	4	15	415
Veterans Admin. Hospital $^{1-3-92}$	Long Beach, Calif.	M. Feld	..	388	1	1	3	271
Los Angeles County Hospital ^{1}	Los Angeles	H. J. Wegrocki	..	8,608	15	7	20	259
Mount Sinai Hospital $^{1-3}$	Los Angeles	F. G. Alexander	..	132	...	2	6	233
University of California Hospital $^{1-3-93}$	Los Angeles	N. Q. Brill	..	90	...	6	22	229
Veterans Admin. Hospital $^{1-3}$	Los Angeles	J. T. Ferguson	11	3,648	98	15	45	270
Metropolitan State Hospital ^{1}	Norwalk, Calif.	R. E. Wyers	15-87	5,640	78	14	30	613
Stanford Medical Center and Associated Hospitals		....	..	.....	...	12	36	175
Palo Alto—Stanford Hospital Center	Palo Alto, Calif	T. A. Gonda	..	.....	...	..	..	...
Veterans Admin. Hospital	Palo Alto, Calif.	H. D. Van Witzleben	..	.....	...	..	..	...
Langley Porter Clinic ^{1}	San Francisco	A. Simon	13	282	...	15	53	200
Veterans Admin. Hospital $^{1-3}$	Sepulveda, Calif.	N. C. Mace	..	1,265	37	5	12	271
Mendocino State Hospital $^{1-3}$	Talmage, Calif.	D. Lieberman	..	3,847	88	3	9	415
University of Colorado Medical Center								
Colorado Psychiatric Hospital $^{1-3}$	Denver	H. S. Gaskill	16	784	1	15	49	216
Veterans Admin. Hospital $^{1-3}$	Denver	L. L. Woodfin	..	595	8	1	3	254
Institute of Living $^{1-3}$	Hartford, Conn.	F. J. Braceland	..	963	2	8	16	333
Connecticut State Hospital $^{1-3}$	Middletown, Conn.	H. S. Whiting	..	4,346	76	8	24	455
Yale-New Haven Medical Center								
Grace-New Haven Community Hospital $^{1-3}$	New Haven, Conn.	T. Lidz	17	37	...	..	15	75
Veterans Admin. Hospital $^{1-3}$	West Haven, Conn.	J. W. Higgins	18	488	1	14	28	254
Fairfield State Hospital $^{1-3}$	Newtown, Conn.	J. E. Oltman	..	4,545	136	12	36	455
Norwich State Hospital $^{1-3}$	Norwich, Conn.	R. H. Kettle	..	4,459	116	9	25	455
Delaware State Hospital $^{1-3}$	Farnhurst, Del.	M. A. Tarumianz	19	1,930	50	4	14	200
Georgetown University Hospital $^{1-3-127}$	Washington, D. C.	G. N. Raines	..	.....	...	8	26	175
University of Florida Teaching Hospital,								
J. Hillis Miller Health Center	Gainesville, Fla.	....	..	.....	...	..	..	...
Jackson Memorial Hospital $^{1-3}$	Miami, Fla.	J. M. Caldwell	..	1,042	3	7	21	250
Medical College of Georgia Hospitals								
Eugene Talmadge Memorial Hospital $^{1-3}$	Augusta, Ga.	E. J. McCranie	..	109	...	3	9	250
University Hospital $^{1-3}$	Augusta, Ga.	H. M. Cleckley	..	788	2	1	2	200
Veterans Admin. Hospital $^{1-3}$	Augusta, Ga.	M. Dunn	27	1,856	2	..	3	270
Hawaiian Psychiatric Training Program								
Queens Hospital $^{1-3}$	Honolulu, Hawaii	K. Rusch	..	476	...	1	3	150
Territorial Hospital $^{1-3}$	Kaneohe, Hawaii	R. S. Spencer	..	1,588	21	4	12	633
Chicago State Hospital $^{1-3}$	Chicago	J. Masserman	23-84	4,728	47	15	55	300
Illinois State Psychiatric Institute	Chicago	J. Masserman	84	.....	...	..	..	...
Michael Reese Hospital $^{1-3}$	Chicago	R. R. Grinker	..	732	1	5	15	...
Mount Sinai Hospital $^{1-3}$	Chicago	I. Finkelman	..	365	1	2	6	225
Northwestern University Medical Center $^{1-3}$	Chicago	B. Boshes	..	4,150	75	10	30	...
Chicago Wesley Memorial Hospital $^{1-3}$	Chicago	B. Boshes	..	524	...	1	1	125
Veterans Admin. Research Hospital $^{1-3}$	Chicago	P. C. Agnew	..	203	...	1	3	271
Veterans Admin. Hospital ^{1}	Downey, Ill.	A. Paunez	26	3,214	75	8	18	271
Presbyterian-St. Luke's Hospital $^{1-3-411}$	Chicago	F. J. Gerty	..	164	1	3	9	125
Stritch School of Medicine Affiliated Hospitals $^{-156}$		J. J Madden	..	.....	...	..	..	...
Loretto Hospital $^{1-3}$	Chicago	....	..	544	2	2	2	200
Mercy Hospital $^{1-3}$	Chicago	....	..	290	...	3	9	225
University of	Chicago	C. K. Aldrich	..	119	...	4	13	200
University of								
Educational	Chicago	F. J. Gerty	27	179	2	3	9	145
Veterans Admin. West Side Hospital $^{1-3}$	Chicago	L. Halperin	..	520	5	3	9	270
Veterans Admin. Hospital $^{1-3-154}$	Hines, Ill.	L. Jensen	25	729	4	2	6	270
Indiana University Affiliated Hospitals								
Indiana University Medical Center ^{1}	Indianapolis	J. I. Nurnberger	28	.....	1	12	26	405
Larue D. Carter Memorial Hospital	Indianapolis	D. F. Moore	..	680	...	12	36	405
Marion County General Hospital $^{1-3}$	Indianapolis	D. W. Schuster	28	508	2	2	6	210
Veterans Admin. Hospital $^{1-3}$	Indianapolis	T. N. Tausig	..	449	2	..	..	271
Mental Health Institute $^{1-3}$	Cherokee, Iowa	W. C. Brinegar	..	1,826	50	4	12	800
Iowa State Psychopathic Hospital $^{1-3}$	Iowa City	P. E. Huston	..	325	...	4	12	300

Numerical and other references will be found on pages 788 through 790.

23. PSYCHIATRY—Continued

Name of Hospital	Location	Chief of Service	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
University of Kansas Medical Center [1-3]	Kansas City, Kan.	D. Greaves	..	179	...	8	24	175
Veterans Admin. Hospital [1-3]	Kansas City, Mo.	..	..	.....	...	..	..	...
C. F. Menninger Memorial Hospital [1-3]	Topeka, Kan.		29	263	...	..	8	350
Topeka State Hospital [1-3-168]	Topeka, Kan.		29	2,273	51	20	60	324
Veterans Admin. Hospital [1-3-169]	Topeka, Kan.	D. W. Hammersley	29	1,629	25	20	31	271
University of Louisville Hospitals		S. S. Ackerly	..	.....	...	..	..	...
Central State Hospital [1-3]	Lakeland, Ky.	W. Fox	..	3,000	32	1	2	200
Veterans Admin. Hospital [1-3]	Lexington, Ky.	See Listing of This Hospital in Following Section.						
Louisville General Hospital [1-3]	Louisville, Ky.	S. S. Ackerly	..	936	3	6	18	200
Norton Memorial Infirmary [1-3]	Louisville, Ky.	S. S. Ackerly	..	260	...	..	6	250
Veterans Admin. Hospital [1-3]	Louisville, Ky.	A. Guiglia	32	338	2	1	1	250
Charity Hospital of Louisiana								
Louisiana State University Unit [1]	New Orleans	C. Watkins	35	603	7	4	10	100
Tulane University Unit [1]	New Orleans	R. G. Heath	34	550	4	4	10	100
Johns Hopkins Hospital [1-3]	Baltimore	J. C. Whitehorn	36	269	...	7	21	250
Seton Institute [1-3]	Baltimore	L. H. Bartemeier	..	601	1	3	12	276
University Hospital [1]	Baltimore	....	..	.....	...	..	..	...
Spring Grove State Hospital [1-3]	Catonsville, Md.	G. Longley	..	5,252	71	5	16	317
Veterans Admin. Hospital [1-3-183]	Perry Point, Md.	W. M. Harris	37	2,164	43	2	10	270
Sheppard and Enoch Pratt Hospital [1-3]	Towson, Md.	H. M. Murdock	..	445	8	4	10	367
Veterans Admin. Hospitals of the Boston Area								
Veterans Admin. Hospital [1-3]	Bedford, Mass.	B. S. Wells	39	2,155	42	3	9	371
Veterans Admin. Hospital [1-3]	Boston (Jamaica Plain)	S. Tartakoff	..	754	3	10	38	271
Veterans Admin. Hospital [1-3]	Brockton, Mass.	A. S. Mason	..	1,612	19	6	6	270
Boston State Hospital [1-3]	Boston	J. Mann	..	4,620	126	16	30	292
Massachusetts General Hospital								
General Hospital Division [1-3]	Boston	E. Lindemann	40	140	...	..	..	67
McLean Hospital [1-3-189]	Belmont, Mass.	A. H. Stanton	10	486	18	..	15	...
Massachusetts Memorial Hospital [1-3-197]	Boston	B. Bandler	38	145	...	..	12	200
Massachusetts Mental Health Center [1]	Boston	J. R. Ewalt	..	788	...	20	47	250
Peter Bent Brigham Hospital [1-3]	Boston	H. M. Fox		Incl. in Int. Med.			2	350
Worcester State Hospital [1-3]	Worcester, Mass.	S. Kligerman	..	3,906	19	9	16	262
University Hospital [1-3-215]	Ann Arbor, Mich	R. W. Waggoner	..	592	...	12	16	335
Henry Ford Hospital [1-3]	Detroit	L. D. Proctor	11	323	2	1	3	368
Lafayette Clinic [1-3]	Detroit	J. S. Gottlieb	86	313	...	12	36	370
Receiving Hospital [1-3]	Detroit	J. M. Dorsey	11	6,090	30	1	5	393
Wayne County General Hospital and Infirmary [1-3]	Eloise, Mich.	J. Belisle	10	4,582	20	5	15	334
Northville State Hospital [1-3]	Northville, Mich.	P. N. Brown	..	2,760	39	15	15	511
Pontiac State Hospital [1-3]	Pontiac, Mich.	I. A. La Core	10	4,128	68	8	20	511
Ypsilanti State Hospital [1-3]	Ypsilanti, Mich.	O. R. Yoder	..	5,224	117	7	21	511
University of Minnesota Affiliated Hospitals								
Minneapolis General Hospital [1-3]	Minneapolis	W. F. Sheeley	..	906	1	1	2	220
University Hospital [1-3]	Minneapolis	D. W. Hastings	..	694	...	7	19	250
Veterans Admin. Hospital [1-3-229]	Minneapolis	W. Simon	16	945	2	11	14	271
Mayo Foundation [1]	Rochester, Minn.	H. P. Rome	17	926	4	4	17	155
Veterans Admin. Hospital—Gulfport Division [3-171]	Biloxi, Miss.	L. G. Behan	34	1,401	22	3	8	271
University of Mississippi Medical Center								
University Hospital [1-3]	Jackson, Miss.	F. J. Moore	..	90	...	4	12	...
Mississippi State Hospital [1]	Whitfield, Miss.	J. J. Head	..	8,011	96	6	6	500
Kansas City General Hospital [1-3]	Kansas City, Mo.	D. K. Ziegler	..	124	...	4	12	220
Barnes Hospital [1-3-241]	St. Louis	E. F. Gildea	10	1,105	3	13	27	50
St. Louis City Hospital [1-3-242]	St. Louis	G. Ulett	..	1,408	1	8	20	234
St. Louis State Hospital [1-3]	St. Louis	L. H. Kohler	..	3,283	17	8	24	350
Veterans Admin. Hospital [1-3]	St. Louis	B. A. Cruvant	48	246	...	3	6	271
Nebraska Psychiatric Institute [1-3]	Omaha, Neb.	C. Wittson	51	437	...	10	34	300
Veterans Admin. Hospital [1-3]	Omaha, Neb.	F. A. Majka	53	451	1	2	6	270
New Jersey State Hospital at Ancora [1-3]	Hammonton, N. J.	H. H. Brunt, Jr.	..	3,760	182	4	12	542
Veterans Admin. Hospital [1-3]	Lyons, N. J.	P. Weitz	54	2,492	43	3	9	271
New Jersey State Hospital [1-3]	Marlboro, N. J.	J. B. Gordon	..	1,071	139	2	6	542
New Jersey Neuro-Psychiatric Institute [1-3]	Skillman, N. J.	R. E. Bennett	..	1,477	25	2	6	542
New Jersey State Hospital [1-3]	Trenton, N. J.	H. S. Magee	85	5,139	110	4	12	335
Albany Hospital [1-3]	Albany, N. Y.	W. L. Holt, Jr.	..	1,392	3	3	8	200
Veterans Admin. Hospital [1]	Albany, N. Y.	T. A. Gilmore	..	539	1	3	9	271
Brooklyn State Hospital [1-3]	Brooklyn, N. Y.	N. Beckenstein	..	5,852	27	4	17	450
Kings County Hospital Center [1-3]	Brooklyn, N. Y.	D. M. Engelhardt	..	9,561	24	10	32	195
Veterans Admin. Hospital [1-3]	Brooklyn, N. Y.	M. Paine	57	255	2	..	2	270
Buffalo State Hospital [1-3]	Buffalo	D. Whitehead	..	3,648	78	5	15	457
Edward J. Meyer Memorial Hospital [1-3]	Buffalo	S. M. Small	..	2,945	24	3	9	322
Central Islip State Hospital [1-3]	Central Islip, N. Y.	F. J. O'Neill	..	12,018	341	14	40	458
Kings Park State Hospital [1-3]	Kings Park, N. Y.	C. Buckman	..	10,400	135	9	13	457
Marcy State Hospital [1-3]	Marcy, N. Y.	N. Bigelow	..	2,819	77	9	9	449
Middletown State Homeopathic Hospital [1-3]	Middletown, N. Y.	H. Pleasure	..	4,414	108	6	16	457
Veterans Admin. Hospital [1-3-280]	Montrose, N. Y.	G. Rosenberg	61	2,326	51	3	7	271
Bellevue Hospital Center								
Div. III—New York University College of Medicine [1-3]	New York City	A. Zitron	58	19,222	127	20	50	195
Bronx Municipal Hospital Center [1-3]	New York City	M. Rosenbaum	..	1,179	2	12	44	195
Columbia-Presbyterian Medical Center		L. C. Kolb	..	....	...	..	..	...
New York State Psychiatric Institute [1-3]	New York City	....	..	386	2	6	6	200
Presbyterian Hospital [1]	New York City	....	..	....	..	1	4	250
Manhattan State Hospital [1-3]	New York City	J. H. Travis	59	5,035	105	14	14	457
New York Hospital [1-3]	New York City	O. Diethelm	..	320	..	4	15	189
St. Luke's Hospital [1-3]	New York City	J. M. Cotton	..	119	..	1	3	100
St. Vincent's Hospital [1-3]	New York City	H. J. Tompkins	..	682	..	5	16	200
St. Vincent's Hospital of Westchester County	Harrison, N. Y.	....	..	.....	...	..	..	...
Veterans Admin. Hospital (Bronx) [1-3-300]	New York City	W. Brown	60	1,170	3	6	18	271
Veterans Admin. Hospital (Manhattan) [1-3-284]	New York City	M. Wiederlight	..	562	6	3	18	271
Veterans Admin. Hospital [1-3]	Northport, N. Y.	H. Tanner	..	3,264	31	4	6	266
Rockland State Hospital [1-3-300]	Orangeburg, N. Y.	A. M. Stanley	10	9,369	117	10	37	457
Hudson River State Hospital [1-3]	Poughkeepsie, N. Y.	R. C. Hunt	62	7,135	22	5	15	449
Creedmoor State Hospital [1-3]	Queens Village, N. Y.	H. A. La Burt	..	9,319	160	9	60	458
Rochester State Hospital [1-3-301]	Rochester, N. Y.	C. F. Terrence	64	5,680	68	3	7	457
Strong Memorial-Rochester Municipal Hospital [1-3]	Rochester, N. Y.	J. Romano	63	1,129	...	8	26	117

Numerical and other references will be found on pages 788 through 790.

23. PSYCHIATRY—Continued

Name of Hospital	Location	Chief of Service	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
State University of New York								
Upstate Medical Center Hospitals [1-3]	Syracuse, N. Y.	M. Hollender	..	803	5	6	18	233
Veterans Admin. Hospital [1-3]	Syracuse, N. Y.	J. J. Danehy	..	435	5	6	6	270
Syracuse Psychiatric Hospital [1-3]	Syracuse, N. Y.	M. H. Hollender	66	405	1	..	4	487
Utica State Hospital [1-3-312]	Utica, N. Y.	B. B. Young	..	3,325	102	6	12	487
Grasslands Hospital [1-3]	Valhalla, N. Y.	F. V. Rockwell	..	1,491	5	3	7	225
Pilgrim State Hospital [1-3]	West Brentwood, N. Y.	H. S. Barahal	..	16,844	332	20	60	450
New Y [illegible]ision [1-3]	White Plains, N. Y.	J. H. Wall	..	767	11	6	14	250
North [illegible]-3-313	Chapel Hill, N. C.	G. C. Ham	..	564	...	10	40	260
Duke								
Duke Hospital [1-3]	Durham, N. C.	E. W. Busse	..	443	1	8	28	200
Veterans Admin. Hospital [1-3]	Durham, N. C.	J. B. Parker, Jr.	..	412	...	2	10	270
University of Cincinnati College of Medicine Hospital Group								
Cincinnati General Hospital [1-3]	Cincinnati	M. Levine	69	853	3	14	43	225
Veterans Admin. Hospital [1-3]	Cincinnati	H. Hiatt	..	384	1	..	..	271
Cleveland Receiving Hospital and State Institute of Psychiatry [1-3-328]	Cleveland	E. N. Hinko	..	1,508	1	8	24	375
University Hospitals of Cleveland [1-3]	Cleveland	D. D. Bond	71	428	...	6	15	...
Western Reserve University Medical School Affiliated Hospitals								
Veterans Admin. Hospital [1-3]	Cleveland	J. Ross	71	193	4	1	3	271
Columbus State Hospital [1-3-338]	Columbus, Ohio	R. L. Johnson	10	3,470	95	12	36	600
Ohio State University Hospitals								
Columbus Psychiatric Institute and Hospital [1]	Columbus, Ohio	R. M. Patterson	10	850	...	10	27	375
Harding Sanitarium [1]	Worthington, Ohio	H. S. Evans	..	661	...	2	5	...
Central State-Griffin Memorial Hospital [1-3-346]	Norman, Okla.	M. Wettstein	..	....	...	4	12	500
University of Oklahoma Medical Center		L. J. West	..	....	...	8	26	...
University Hospital [1-3]	Oklahoma City		..	55	...	..	..	333
Veterans Admin. Hospital [1]	Oklahoma City	J. T. Shurley	..	198	...	..	..	271
University of Oregon Medical School Hospitals and Clinics	Portland, Ore.		..	....	...	..	..	...
Oregon State Hospital [1]	Salem, Ore.	H. L. Nelson	..	1,760	124	5	8	880
Veterans Admin. Hospital [1-3]	Coatesville, Pa.	M. P. Rosenblum	73	1,951	41	4	12	270
Norristown State Hospital [1]	Norristown, Pa.	A. P. Noyes	..	5,397	109	9	31	...
Eastern Pennsylvania Psychiatric Institute [1-3]	Philadelphia	R. C. Prall	..	286	...	5	20	311
Hahnemann Medical College and Hospital [1-3]	Philadelphia		..	....	...	..	..	...
Hospital of the University of Pennsylvania [1-3]	Philadelphia	K. Appel	..	5	...	8	23	200
Mercy-Douglass Hospital			..	....	...	..	..	...
Jefferson-Friends Hospital			..	....	...	.	..	...
Friends Hospital [1-3]	Philadelphia, Pa.	T. L. Dehne	..	520	8	4	8	400
Jefferson Medical College Hospital [1-3]	Philadelphia	R. A. Matthews	..	340	...	2	8	400
Pennsylvania Hospital—the Institute and the Department for Mental and Nervous Diseases [1-3]	Philadelphia	L. H. Smith	2	776	..	6	17	200
Philadelphia General Hospital [1-3]	Philadelphia	W. Phillips	..	2,100	14	4	12	405
Philadelphia Psychiatric Hospital [1-3]	Philadelphia	S. Cohen	..	1,116	...	7	21	178
Philadelphia State Hospital [1]	Philadelphia	E. L. Sielke	..	7,296	33	12	36	541
Temple University Hospital [1-3]	Philadelphia	O. S. English	74	100	...	4	16	...
Western Psychiatric Institute and Clinic [1-3]	Pittsburgh	H. W. Brosin	75	451	2	15	45	267
Warren State Hospital [1-3]	Warren, Pa.	R. H. Israel	..	4,014	144	12	30	588
Hospital Hato Tejas [1-3]	Bayamon, P. R.	R. Fernandez—Marina	..	480	...	3	7	400
Hospital of Psychiatry [1-3]	Rio Piedras, P. R.	J. A. Rossello	..	167	...	6	18	250
Teaching Hospitals of the Medical College of South Carolina [1]	Charleston, S. C.	J. J. Cleckley	..	839	...	2	6	137
Medical College Hospital			..	...	...	..	..	...
Roper Hospital			..	...	...	..	..	...
Gailor Memorial Psychiatric Hospital [1-3]	Memphis, Tenn.	T. S. Hill	..	397	...	4	12	250
Vanderbilt University Hospital [1-3]	Nashville, Tenn.	W. F. Orr	76	123	...	2	6	50
Parkland Memorial Hospital [1-3]	Dallas, Texas	R. Stubblefield	10	305	...	4	9	300
[illegible]	Dallas, Texas	R. Stubblefield	..	718	...	5	10	300
[illegible] ospitals [1-3]	Galveston, Texas	T. H. Harris	77	2,466	11	10	30	160
[illegible] Affiliated Hospitals								
Jefferson Davis Hospital [1-3]	Houston, Texas	W. T. Lhamon	..	264	1	2	6	83
Methodist Hospital [1-3]	Houston, Texas	M. C Bettis	..	498	...	..	1	220
Veterans Admin. Hospital [1-3]	Houston, Texas	A. D. Pokorny	78	1,968	8	6	18	270
University of Utah Affiliated Hospitals								
Salt Lake County General Hospital [1-3]	Salt Lake City	C. H. H. Branch	..	348	...	5	17	330
Veterans Admin. Hospital [1-3]	Salt Lake City	J. L. Bennett	..	737	5	5	17	330
University of Virginia Medical Center Hospitals								
University of Virginia Hospital [1-3]	Charlottesville, Va.	I. P. Stevenson	80	445	1	4	12	250
Medical College of Virginia—Hospital Division [1-3]	Richmond, Va.	R. A. Senescu	..	754	5	2	5	75
Veterans Admin. Hospital [1-3]	Richmond, Va.	A. Davis	82	755	7	2	6	271
University of Washington Affiliated Hospitals								
King County Hospital Unit No. 1 (Harborview) [1-3]	Seattle	H. S. Ripley	..	1,878	7	..	1	200
University Hospital	Seattle		..	...	...	..	..	...
Veterans Admin. Hospital [1-3]	Seattle	M. H. Johnson	83	302	2	5	10	271
Northern State Hospital	Sedro Woolley, Wash.		..	...	...	..	..	...
University Hospitals [1-3-388]	Madison, Wis.	R. Roessler	..	616	...	10	34	250
Associate Training Programs of Milwaukee Hospitals								
Milwaukee County Hospital for Mental Diseases	Milwaukee		..	...	...	..	..	...
Veterans Admin. Hospital [1-3-394]	Milwaukee, (Wood) Wis.	M. J. Primakow	..	1,638	10	2	4	271
Milwaukee Sanitarium Foundation [1-3]	Wauwautosa, Wis.	E. S. Turrell	..	594	10	3	9	375

Residency programs in the following hospitals have been approved for TWO years of training by the Council and the American Board of Psychiatry and Neurology, through the Residency Review Committee for Psychiatry and Neurology. (Applicants intending to qualify for examination by the American Board of Psychiatry and Neurology, Inc., should refer to the Board requirements that the candidate have had at least two of the three years of his training in a program or programs approved at the two or three year level—see summary of requirements American Board of Psychiatry and Neurology, Inc., page 835).

Hospitals, 37; Residencies, 362.

NONFEDERAL AND VETERANS ADMINISTRATION

Name of Hospital	Location	Chief of Service	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
Veterans Admin. Hospital [1-3]	Tuskegee, Ala.		..	....	...	2	4	271
Agnews State Hospital [1-3]	Agnew, Calif.	J. L. Waters	..	8,506	124	3	3	415
Herrick Memorial Hospital [1-3]	Berkeley, Calif.	A. E. Bennett	..	747	...	8	7	300
Mount Zion Hospital [1-3]	San Francisco	N. Reider	..	53	...	..	7	...

Numerical and other references will be found on pages 788 through 790.

23. PSYCHIATRY—Continued

Name of Hospital	Location	Chief of Service	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
Stockton State Hospital	Stockton, Calif.	E. F. Galioni	..	6,916	137	3	9	415
District of Columbia General Hospital [1-3]	Washington, D. C.	J. D. Schultz	..	4,601	3	2	7	258
George Washington University Hospital [1-3]	Washington, D. C.	W. Overholser	..	749	1	..	2	175
Galesburg State Research Hospital [1-3]	Galesburg, Ill.	T. T. Tourlentes	84	1,500	40	4	12	500
Veterans Admin. Hospital [1-3]	Lexington, Ky.	E. W. Straus	31	1,842	31	2	4	270
Veterans Admin. Hospital [1-3]	New Orleans	R. G. Heath	34	242	1	1	3	271
Springfield State Hospital [1-3]	Sykesville, Md.	I. L. Hitchman	..	4,633	109	4	14	317
Beth Israel Hospital [1-3]	Boston	G. L. Bibring	..	....	...	..	11	167
Boston City Hospital [1-3]	Boston		..	.....	...	..	..	...
New England Center Hospital [1-3]	Boston	J. M. Hope	..	1,333	...	1	2	100
Medfield State Hospital [1-3]	Medfield, Mass.	D. P. Kenefick	..	2,047	49	4	8	292
Metropolitan State Hospital [1-3]	Waltham, Mass.	M. Asekoff	..	2,887	53	2	4	255
Homer G. Phillips Hospital [1-3]	St. Louis	E. F. Gildea	..	106	1	1	1	235
Creighton Memorial—St. Joseph's Hospital [1-3]	Omaha, Neb.	C. H. Farrell	..	741	...	..	..	...
Essex County Overbrook Hospital [1-3]	Cedar Grove, N. J.	H. A. Davidson	..	4,729	74	5	15	460
New Jersey State Hospital [1-3]	Greystone Park, N. J.	A. Crandell	..	7,132	163	4	10	540
Binghamton State Hospital [1-3]	Binghamtom, N. Y.	U. Schutzer	..	4,823	100	3	6	457
Veterans Admin. Hospital [1-3]	Canandaigua, N. Y.	D. Davis	65	2,078	43	2	4	237
Hillside Hospital [3]	Glen Oaks, N. Y.	J. S. A. Miller	10	539	...	..	25	...
Gowanda State Homeopathic Hospital [1-3]	Helmuth, N. Y.	I. M. Rossman	..	3,046	38	..	8	...
Mount Sinai Hospital [1-3]	New York City	M. R. Kaufman	..	135	..	5	24	75
High Point Hospital [1-3]	Port Chester, N. Y.	A. Gralnick	..	119	...	..	4	420
Willard State Hospital [1-3]	Willard, N. Y.	K. Keill	..	3,618	92	7	12	457
State Hospital [1-3]	Raleigh, N. C.	W. A. Sikes	..	5,900	95	4	8	430
Graylyn-North Carolina Baptist Hospital [1-3]	Winston-Salem, N. C.	A. Randolph	..	1,000	...	5	9	166
Allentown State Hospital [1-3]	Allentown, Pa.	H. T. Fiedler	..	1,755	50	6	16	430
Danville State Hospital [1-3-36G]	Danville, Pa.	R. L. Gatski	..	3,422	44	8	23	430
Embreeville State Hospital [1-3]	Embreeville, Pa.	E. R. Wright	..	.....	...	5	12	437
Harrisburg State Hospital [1-3]	Harrisburg, Pa.	H. C. Baton	..	2,658	50	6	12	408
Mayview State Hospital [1-3]	Mayview, Pa.	J. S. Solhaug	..	3,817	17	6	12	575
State Hospital for Mental Diseases [1-3]	Howard, R. I.	J. F. Regan	..	4,610	110	8	14	437
Austin State Hospital [1-3]	Austin, Texas	S. Hoerster, Jr.	..	6,727	170	15	30	475
Eastern State Hospital [1-3]	Williamsburg, Va.	J. E. Barrett	81	3,608	73	10	20	700

Residency programs in the following hospitals have been approved for ONE year of training by the Council and the American Board of Psychiatry and Neurology, through the Residency Review Committee for Psychiatry and Neurology. (Applicants intending to qualify for examination by the American Board of Psychiatry and Neurology, Inc., should refer to the Board requirements that the candidate have had at least two of the three years of his training in a program or programs approved at the two or three year level—see summary of requirements American Board of Psychiatry and Neurology, Inc., page 835.)

Hospitals, 50; Residencies, 248

UNITED STATES PUBLIC HEALTH SERVICE

Name of Hospital	Location	Chief of Service	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
National Institutes of Health—Clinical Center [1-3]	Bethesda, Md	R. Cohen	..	166	...	..	6	...
U.S. Public Health Service Hospital [1-3]	Stapleton, S. I., N. Y		..	.....	...	..	..	...

NONFEDERAL AND VETERANS ADMINISTRATION

Name of Hospital	Location	Chief of Service	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
Compton Sanitarium [1-3]	Compton, Calif.	G. C. Burns	..	670	1	4	4	350
Sonoma State Hospital [1-3]	Eldridge, Calif.	D. W. Wardell	..	3,485	78	2	2	415
Patton State Hospital [1-3]	Patton, Calif.	O. L. Gericke	..	300	...	2	2	415
Pacific State Hospital [1-3]	Pomona, Calif.	G. Tarjan	..	3,175	37	..	3	415
Kaiser Foundation Hospital [1-3-4]	San Francisco	B. I. Kahn	..	16	...	..	2	200
St. Francis Memorial Hospital [1-3]	San Francisco		..	.....	...	..	..	...
St. Mary's Hospital [1-3]	San Francisco	J. J. Preisinger		Incl. in Int. Med.		1	1	200
Colorado State Hospital [1-3]	Pueblo, Colo.	J. L. Rosenbloom	..	8,186	106	17	28	415
Silver Hill Foundation 2	New Canaan, Conn.	W. B. Terhune	..	384	...	1	3	600
Children's Hospital [1-3]	Washington, D. C.	R. S. Lourie	..	5	...	..	3	200
Duval Medical Center [1-3]	Jacksonville, Fla	S. G. Bedell	..	777	1	2	5	200
Cook County Hospital	Chicago	V. G. Urse	..	8,131	7	2	6	250
North Shore Hospital [1-3]	Winnetka, Ill.	S. Liebman	..	.....	...	..	..	...
Logansport State Hospital	Logansport, Ind.		..	.....	...	..	..	...
Dr. Norman M. Beatty Memorial Hospital [1-3]	Westville, Ind.	D. P. Morton	..	2,827	52	3	3	400
Crownsville State Hospital [1-3]	Crownsville, Md..	L. D. Campbell	..	3,402	65	12	12	400
Chestnut Lodge Sanitarium [1-3]	Rockville, Md.	D. M. Bullard	..	152	1	..	4	...
Foxborough State Hospital [1-3]	Foxborough, Mass.	J. T. Shea	..	1,772	45	4	6	525
Austen Riggs Center [1-37]	Stockbridge, Mass.	R. P. Knight	..	105	...	..	9	515
Taunton State Hospital [1-3]	Taunton, Mass.	W. E. Glass	..	2,685	59	2	2	529
Westborough State Hospital [1-3]	Westborough, Mass.	D. V. Capra	..	2,798	64	2	4	255
Hawthorn Center [1]	Northville, Mich.	R. D. Rabinovitch	10	130	...	1	6	541
Traverse City State Hospital [1-3]	Traverse City, Mich.	M. D. Sommerness	..	4,131	89	6	18	541
Mississippi State Hospital [1]	Whitfield, Miss.	J. J. Head	..	8,011	96	6	6	500
St. Mary's Group of Hospitals [1-3]	St. Louis	D. Smith	50	725	6	1	2	100
Hastings State Hospital [1]	Ingleside, Neb.	J. C. Nielsen	52	1,601	3	8	24	400
New Hampshire State Hospital [1-3]	Concord, N. H.	G. D. Niswander	..	3,624	26	2	6	358
Carrier Clinic	Belle Mead, N. J.		..	.....	...	..	..	...
Bergen Pines County Hospital [1-3]	Paramus, N. J.	E. R. Duty	..	1,532	14	2	2	300
River Crest Sanitarium [1-3]	*Astoria*, N. Y.	*M. Dollin*	..	1,016	3	1	2	250
Meadowbrook Hospital [1-3]	Hempstead, N. Y.	R. R. Steen	..	1,601	22	1	1	225
Lenox Hill Hospital [1-3-22]	New York City	K. Woodward	..	.....	...	..	1	300
New York University—Bellevue Medical Center University Hospital [1-3]	New York City	S. B. Wortis	58	49	1	1	1	135
Roosevelt Hospital [3]	New York City	R. W. Laidlaw	..	182	...	2	4	132
St. Lawrence State Hospital [1-3]	Ogdensburg, N. Y.	H. B. Snow	..	3,197	56	12	12	457
Astor Home for Children [1-3]	Rhinebeck, N. Y.		..	.....	...	..	..	...
Letchworth Village [1-3]	Thiells, N. Y.	I. N. Wolfson	..	4,293	40	2	2	457
Harlem Valley State Hospital [1-3]	Wingdale, N. Y.	L. P. O'Donnell	..	6,786	102	5	10	457
Longview State Hospital [1-3]	Cincinnati	D. Goldman	..	.....	119	3	9	...
St. Charles Hospital [1-3]	Toledo, Ohio	J. M. Kenyon	..	932	...	1	2	450
Albert Einstein Medical Center [1-3]	Philadelphia	P. Sloane	..	.....	...	..	4	250
St. Francis General Hospital and Rehabilitation Institute [1-3]	Pittsburgh	J. A. Malcolm	..	4,804	45	4	4	240

Numerical and other references will be found on pages 788 through 790.

23. PSYCHIATRY—Continued

Name of Hospital	Location	Chief of Service	Program Identification	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
Butler Health Center	Providence, R. I.	....	..	.....	...	..	..	...
Charles V. Chapin Hospital [1-8]	Providence, R. I.	W. N. Hughes	..	1,053	4	3	3	456
Emma Pendleton Bradley Hospital [1-8]	Riverside, R. I.	M. W. Laufer	..	80	...	..	5	283
Brattleboro Retreat [1-8]	Brattleboro, Vt.	R. A. Kenworthy, III	..	1,637	7	2	6	458
Vermont State Hospital [8]	Waterbury, Vt.	R. A. Chittick	..	1,806	29	4	4	460
Mendota State Hospital [1-8]	Madison, Wis.	G. B. Tybring	..	2,675	13	5	9	697

PSYCHIATRY PROGRAM IDENTIFICATION

10. Service in child psychiatry.
11. Six months service at Los Angeles County Hospital, Los Angeles.
12. Nine months service at Mount Zion Hospital, six months at Langley Porter Clinic and service in child psychiatry, San Francisco.
13. Three months of service at Napa State Hospital, San Francisco Hospital, Stockton State Hospital, Sonoma State Home and San Quentin Prison; and six months at Colwell Memorial Hospital.
15. Three months service at Pacific Colony Hospital, Pomona, and three months service in child psychiatry at Camarillo State Hospital.
16. Affiliate services at Colorado General and Denver General Hospitals.
17. Affiliate service at Veterans Administration Hospital, West Haven, Connecticut State Hospital, Fairfield State Hospital, Norwich State Hospital and service in child psychiatry.
18. Twelve months service at Grace-New Haven Community Hospital, New Haven, Connecticut.
19. Six months service at Governor Bacon Health Center, Delaware City.
20. Two months service at George Washington University Hospital, Washington, D. C.
21. Affiliate service at University Hospital, Augusta, Georgia.
22. e Neuropsychiatric Institute of the Uni- , service in child psychiatry.
23. service including service at the Neuro- University of Illinois and three months in child psychiatry.
24. Affiliate service in Neuropsychiatric Institute of the University of Illinois and service in child psychiatry.
25. Child psychiatry, 6 months half-time at Illinois Institute for Juvenile Research. Female in-patient and mixed out-patient at te. Forensic psychiatry at Psychi- cipal Courts. Female in-patient y Illinois, 3 months.
26. Administration Hospital, Hines, Illinois. May include service in child psychiatry.
27. Six months service in child psychiatry.
28. Integrated program including service at Veterans Administration Hospital, Marion County General Hospital and Indiana University Medical Center and Affiliated Hospitals, Indianapolis.
29. Integrated program including service at Veterans Administration Hospital, Menninger Sanitarium and Topeka State Hospital, Topeka, Kansas.
30. Four months service at University of Louisville Services, Louisville, Kentucky, and four months service at Cincinnati General Hospital, Cincinnati, Ohio.
31. Three months service at University of Louisville Services, Louisville, Kentucky.
32. Twelve months service at University of Louisville Services. May include four months service at Central State Hospital; four months service at Louisville General Hospital.
33. Four months service at Central State Hospital and service in child psychiatry.
34. Integrated program including service at Tulane University Unit, Charity Hospital, New Orleans, and Veterans Administration Hospitals, New Orleans, and Biloxi, Mississippi.
35. Six months service in child psychiatry and twelve months service at So l.
36. Servic
37. Three chiatry at Johns Hopkins Hospital more, Maryland.
38. Twelv State Hospital and service in child psychiatry.
39. Twelve-eighteen months service at Veterans Administration Hospital, Boston (Jamaica Plain), Massachusetts, and six months service in child psychiatry.
40. Integrated program including service at Massachusetts General Hospital and McLean Hospital, Waverly; may include 1 year training in child psychiatry at James Jackson Putnam Children's Center.
41. Twelve months service at University Hospital, Ann Arbor, Michigan.
42. University Hospital, Ann Arbor, Michigan.
43. Three months service at Coldwater State Home and Training School, Caro State and Ionia State Hospitals and service in child psychiatry.
44. Six months service in child psychiatry at Children's Center of Metropolitan Detroit.
45. Six months service at Receiving Hospital, Children's Hospital, Detroit, and Wayne County General Hospital and Infirmary, Eloise, Michigan.
46. University of Minnesota Hospitals, Minneapolis, Minnesota.
47. Three months service at Rochester State Hospital, Rochester, Minn.
48. Affiliate service at Barnes Hospital, St. Louis and three months at St. Louis State Hospital.
49. Six months service at Barnes Hospital, St. Louis, Missouri.
50. Service at St. Louis State Hospital and St. Louis City Hospital.
51. Service at Lincoln, Norfolk and Hastings State Hospitals.
52. Service at University of Nebraska Hospital.
53. Affiliate service at University of Nebraska Hospital and Creighton Memorial-St. Joseph Hospital, Omaha, Nebraska.
54. Six months service at Newark City Hospital; three months at New Jersey State Hospital and three months in child psychiatry.
55. Three months service at Albany Hospital, Albany, New York.
56. Affiliate services at Edward J. Meyer Memorial Hospital and Buffalo State Hospital.
57. Six months service at King's County Hospital Center, Brooklyn, New York.
58. Integrated program with service at Bellevue Hospital Center and University Hospital.
59. Six months service at Mount Sinai Hospital, New York City.
60. Service in child psychiatry. May include six months service at Mount Sinai Hospital and three months at Manhattan State Hospital.
61. Twelve months service at New York Hospital and four months at Veterans Administration Hospital, New York City (Bronx), New York.
62. Three months service at Grasslands, Rockland State, Albany Hospitals and Letchworth Village.
63. Six months service at Rochester State Hospital, Rochester, New York.
64. Six months service at Strong Memorial-Rochester Municipal Hospitals, Rochester.
65. Affiliate service at Strong Memorial-Rochester Municipal Hospitals.
66. Three months service at Syracuse Memorial, Binghamton, Syracuse and Willard State Hospitals, service at Craig Colony and service in child psychiatry.
67. Affiliate service at State Hospitals at Raleigh and Butner, North Carolina.
68. Eighteen months service at Duke Hospital, Durham, North Carolina.
69. Includes rotation through Central (Mental Hygiene) Clinic of the Community Chest, Child Guidance Home, Longview State Hospital, Jewish Hospital.
70. Integrated program including service at Cleveland Clinic and Windsor Hospital.
71. Integrated program including service at University Hospital and Veterans Administration Hospital, Cleveland, Ohio.
72. Integrated program with service at Institute of the Pennsylvania Hospital and Pennsylvania Hospital Department for Mental and Nervous Diseases.
73. Affiliate service at Temple University Hospital, Institute of Pennsylvania, Hospital of the Woman's Medical College of Pennsylvania and Veterans Admin. Hospital, Philadelphia.
74. Six months program at Eastern Pennsylvania Psychiatric Institute and one year in integrated Pediatric Psychiatry at the St. Christopher's Hospital for Children.
75. Two months affiliate service for institutional care.
76. Integrated program including service at Vanderbilt University Hospital, Veterans Administration Hospital, Nashville, Veterans Administration Hospital, Murfreesboro, and Central State Hospital, Nashville.
77. Four months affiliate service at St. Mary's Infirmary, Galveston, Texas.
78. Service in child psychiatry at Jefferson Davis Hospital, Houston, Texas.
79. Six months affiliate service at Veterans Administration Hospital, Salt Lake City, Utah, and affiliate services at State Hospital, Provo, Utah.
80. Integrated program including service at University of Virginia Hospital, Charlottesville and Veterans Administration Hospital, Roanoke, Va.
81. Affiliate service at Southwestern State Hospital, Marion and Lynchburg State Colony, Lynchburg, Va.
82. Six months service at Medical College of Virginia—Hospital Division, Richmond, and service in child psychiatry.
83. Six months service at Veterans Administration Hospital, American Lake, Washington, and six months in child psychiatry.
84. Illinois Mental Health Service program under the direction of the Illinois State Psychiatric Institute.
85. One year affiliated training in child psychiatry afforded at Child Guidance Center of Mercer County.
86. Up to one year of child psychiatry may be obtained at Children's Center of Metropolitan Detroit.
87. Pasadena Child Guidance Clinic, Pasadena, Calif.

Numerical and other references will be found on pages 788 through 790.

24. PULMONARY DISEASE

Residency programs in the following hospitals have been approved for ONE-TWO years of training by the Council and the Subspecialty Board for Pulmonary Disease of the American Board of Internal Medicine, as offering acceptable training in the specialty.

Hospitals, 112; Residencies, 366

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
UNITED STATES ARMY							
Fitzsimons Army Hospital [1-3]	Denver	J. A. Wier	935	20	4	4	...
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE							
Freedmen's Hospital [1-3]	Washington, D. C.	K. A. Harden	163	6	..	1	376
NONFEDERAL AND VETERANS ADMINISTRATION							
Maricopa County General Hospital [1-3]	Phoenix, Ariz.	M. Jeffrey	261	4	1	1	300
City of Hope Medical Center [1-3]	Duarte, Calif.	H. G. Smith	284	16	1	1	400
Barlow Sanatorium [1]	Los Angeles	H. W. Bosworth	236	..	1	1	200
Hospital of the Good Samaritan [1-3]	Los Angeles	R. H. Smart	...	..	..	..	...
Los Angeles County Hospital [1]	Los Angeles	H. Gierson	1,259	56	..	1	250
Bret Harte Sanatorium [1-3]	Murphys, Calif.	L. M. Barber	495	6	1	1	300
San Diego County General Hospital [1]	San Diego, Calif.	J. J. Wyborney	241	4	..	..	...
Santa Clara County Hospital [1-3]	San Jose, Calif.	R. M. Manson	195	3	..	1	502
Tulare-Kings Counties Hospital [1-3]	Springville, Calif.	W. A. Winn	533	16	3	3	600
National Jewish Hospital [1-3]	Denver	S. H. Dressler	538	17	6	9	200
University of Colorado Medical Center							
Colorado General Hospital [1-3]	Denver	R. S. Mitchell	80	3	..	2	...
Denver General Hospital [1-3]	Denver	.....	.....	..	..	..	...
Cedarcrest Hospital [1-3]	Newington, Conn.	R. C. Edson	577	24	1	1	350
Uncas-on-Thames Hospital [1-3]	Norwich, Conn.	N. L. Cressy	581	13	2	2	350
Laurel Heights Hospital [1-3]	Shelton, Conn.	K. S. Howlett, Jr.	661	19	2	2	205
District of Columbia General Hospital [1-3]	Washington, D. C.	S. Katz	752	40	2	4	233
George Washington University Hospital [1-3]	Washington, D. C.	J. J. Feffer	423	8	1	2	150
Southeast Florida							
Tuberculosis Hospital	Lantana, Fla.	M. Kovnat	966	19	2	2	200
Jackson Memorial Hospital	Miami, Fla.	.....	.....	..	..	..	...
Southwest Florida Tuberculosis Hospital	Tampa, Fla.	.....	.....	..	..	..	...
Leahi Hospital [1-3]	Honolulu, Hawaii	H. H. Walker	681	9	2	3	350
Chicago State Tuberculosis Sanitarium [1-3]	Chicago	M. M. Pyle	614	16	2	2	300
City of Chicago Municipal							
Tuberculosis Sanitarium [1-3]	Chicago	L. H. Berard	2,187	73	2	2	155
Cook County Hospital—							
Oak Forest Tuberculosis Hospital	Chicago	G. W. Holmes, G. C. Turner	2,023	87	1	3	140-250
Michael Reese Hospital [1-3]	Chicago	D. Radner	1,100	19	1	2	125
Mount Vernon State							
Tuberculosis Sanitarium [1-3]	Mount Vernon, Ill.	H. C. Rogers	328	4	2	2	473
Peoria Municipal							
Tuberculosis Sanitarium [1-3]	Peoria, Ill.	D. Morse	147	3	1	1	250
Healthwin Hospital [1]	South Bend, Ind.	E. W. Custer	212	1	1	1	500
University of Kansas Medical Center [1-3-48]	Kansas City, Kan.	M. FitzPatrick	242	13	..	4	125
Veterans Admin. Hospital [1-3]	Kansas City, Mo.	C. E. Andrews	Incl. in Int. Med.		..	..	271
Charity Hospital of Louisiana							
Louisiana State University Unit [1]	New Orleans	W. R Akenhead, J H. Seabury	238	10	2	3	175
Central Maine Sanatorium [1-3]	Fairfield, Maine	W. B. Grow	250	10	1	1	75
Veterans Admin. Hospital [1-3]	Baltimore	R. C. Duvall	969	32	1	4	271
Glenn Dale Hospital [1-3]	Glenn Dale, Md.	D. Goldenberg	1,129	34	6	6	334
Boston Sanatorium [1-3]	Boston	.....	.....	..	..	..	...
Cambridge Sanatorium [1-3]	Cambridge, Mass.	R. Kurzmann	266	4	2	2	380
Veterans Admin. Hospital [1-3]	Rutland Heights, Mass.	S. T. Allison	1,278	43	1	1	271
Middlesex County Sanatorium [1-3]	Waltham, Mass	H. M. Payne	407	8	2	2	607
Westfield State Sanatorium [1-3]	Westfield, Mass.	J. M. Houser	297	16	..	3	527
Worcester County Sanatorium	Worcester, Mass	H J. Lorge	239	15	3	3	350
Henry Ford Hospital [1-3]	Detroit	E. E. Coates, Jr.	562	23	..	2	295
Herman Kiefer Hospital [1-3]	Detroit	P. T. Chapman	2,662	82	9	11	354
Michigan State Sanatorium [3]	Howell, Mich	W. F. Fidler	709	9	4	4	927
Wm. H. Maybury Sanatorium [1-3]	Northville, Mich.	W L. Howard	1,075	27	7	7	350
Veterans Admin. Hospital [1-3]	Minneapolis	F. M. MacDonald	604	6	..	4	271
Nopeming Sanatorium [1-3]	Nopeming, Minn.	R. W. Backus	489	11	1	1	150
Glen Lake Sanatorium [1-3]	Oak Terrace, Minn.	R. H. Frost	717	30	3	3	329
Mayo Foundation [1]	Rochester, Minn.	.....	Incl. in Int. Med.		..	..	...
Mississippi State Sanatorium [1-3]	Sanatorium, Miss.	C. A. Watkins	1,052	14	2	2	400
Robert Koch Hospital [1-3]	Koch, Mo.	B. Friedman	1,180	18	5	13	370
Missouri State Sanatorium [1-3]	Mount Vernon, Mo.	J. L. Yates	1,614	48	2	3	333
St. Mary's Group of Hospitals [1-3]	St. Louis	.....	.....	..	..	..	...
Veterans Admin. Hospital [1-3-255]	East Orange, N. J.	M. J. Small	830	29	..	1	270
New Jersey Sanatorium for							
Chest Diseases [1-3]	Glen Gardner, N. J.	J. A. Smith	468	8	5	5	335
B. S. Pollak Hospital for Chest Diseases [1-3]	Jersey City, N. J.	S. Cohen	1,025	..	9	9	167
Bergen Pines County Hospital [1-3]	Paramus, N. J.	R. R. Little	530	50	3	3	200
Veterans Admin. Hospital	Albuquerque, N. M.	A. N. Longfield	1,304	36	1	1	...
Albany Hospital [1-3]	Albany, N. Y.	F. C. Maxon, Jr.	249	5	2	2	160
Kings County Hospital Center [1-3]	Brooklyn, N. Y.	H. A. Lyons	1,563	61	2	5	115
Veterans Admin. Hospital [1-3]	Brooklyn, N. Y.	H. L. Katz	505	39	..	2	347
Edward J. Meyer Memorial Hospital [1-3]	Buffalo	D. R. McKay	877	17	..	1	331
City Hospital at Elmhurst [1-3]	Elmhurst, N. Y.	.....	...	..	..	..	115
Nassau County Tuberculosis Hospital [1-3]	Farmingdale, N. Y.	J. G. Carlton	496	20	4	4	...
Triboro Hospital [1-3]	Jamaica, N. Y.	H. H. Epstein	1,369	24	12	12	175
Ulster County Tuberculosis Hospital [1-3]	Kingston, N. Y.	H. F. Schwartz	82	7	..	1	455
Mount View Hospital [1-3]	Lockport, N. Y.	L. C. Evander	278	11	1	2	372
Mount Morris Tuberculosis Hospital [1-3]	Mount Morris, N. Y.	F. L. Armstrong	366	25	2	2	394
Bellevue Hospital Center		.....	.....	..	..	..	115
Div. I—Columbia University [1-3]	New York City	J. McClement	1,818	44	18	26	115
Bronx Municipal Hospital Center [1-3]	New York City	C. W. Frank	885	45	3	10	115

Numerical and other references will be found on pages 788 through 790.

24. PULMONARY DISEASE—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
Montefiore Hospital [1-3]	New York City	R. G. Bloch	459	21	..	5	187
Morrisania City Hospital [1-3]	New York City	P. Hurwitz	Incl. in Int. Med.		1	1	145
New York University-Metropolitan Medical Center							
Metropolitan Hospital [1-3]	New York City	I. G. Epstein	689	7	7	7	145
St. Joseph's Hospital For Chest Diseases [1-3]	New York City	F. J. McCarthy	550	14	4	4	250
Veterans Admin. Hospital (Bronx) [1-3]	New York City	D. J. Stone	1,312	59	1	3	271
Homer Folks Tuberculosis Hospital [1-3]	Oneonta, N. Y.	R. Horton	531	8	2	2	594
J. N. Adam Memorial Hospital [1-3]	Perrysburg, N. Y.	R Nauen	436	13	2	5	594
Ray Brook State Tuberculosis Hospital [1-3]	Ray Brook, N. Y.	F. Beck	611	19	2	2	594
Monroe County—Iola Sanatorium [1-3]	Rochester, N. Y.	W. G. Swalbach	466	22	2	6	416
Glendridge Hospital [1-3]	Schenectady, N. Y.	J. M. Blake	524	13	3	3	260
Sea View Hospital [1-3]	Staten Island, N. Y.	E. H. Robitzek	2,935	110	27	27	145
Veterans Admin. Hospital [1-3]	Sunmount, N. Y.	E. J. Des Autels	655	26	1	1	271
Veterans Admin. Hospital [1-3]	Syracuse, N. Y.	A. D. Renzetti, Jr.	184	8	..	1	270
Grasslands Hospital [1-3]	Valhalla, N. Y.	W. G. Childress	480	36	3	7	225
Duke Hospital [1-3]	Durham, N. C.	....	....	...	..	..	...
Veterans Admin. Hospital [1-3]	Oteen, N. C.	W. S. Schwartz	1,945	45	..	6	276
Veterans Admin. Hospital [1-3]	Brecksville, Ohio	R. A. Hemphill	819	22	..	2	271
Cleveland Metropolitan General Hospital [1-3]	Cleveland	R. C. McKay	628	27	5	5	422
Sunny Acres—Cuyahoga County							
Tuberculosis Hospital [1-3]	Cleveland	H. G. Curtis	898	15	3	3	325
Ohio State University Hospitals							
University Hospital [1-3-341]	Columbus, Ohio	R. H. Browning	.....	..	2	8	300
Ohio Tuberculosis Hospital [1-3]	Columbus, Ohio	R. J Atwell	460	11	2	8	300
Veterans Admin. Hospital	Portland, Ore.	....	.....	..	..	..	...
Eagleville Sanatorium [1-3]	Eagleville, Pa.	J J. Kirshner	410	14	3	3	...
Graduate Hospital of the University							
of Pennsylvania [1-3]	Philadelphia	H. Israel	Incl. in Int. Med.		1	1	100
Hospital of the University of Pennsylvania [1-3]	Philadelphia	R. Mayock	Incl. in Int. Med.		2	3	...
Philadelphia General Hospital [1-3]	Philadelphia	W. Weiss	1,047	66	1	2	382
Samuel G. Dixon State Hospital [1]	South Mountain, Pa.	W. A. Gette	1,560	19	2	4	469
Oakville Memorial Sanatorium [1]	Memphis, Tenn.	W. G. Glass	331	12	1	2	200
Veterans Admin. Hospital [1-3]	Memphis, Tenn.	S. Phillips	1,200	23	1	1	271
West Tennessee Tuberculosis Hospital [1-3]	Memphis, Tenn.	E. P. Bowerman	930	32	2	3	245
Veterans Admin. Hospital [1-3]	Nashville, Tenn.	....	....	...	..	..	...
Parkland Memorial Hospital [1-3]	Dallas, Texas	J. O. Armstrong	324	2	2	2	150
Veterans Admin. Hospital [1-3]	Dallas, Texas	D. O. Shields	848	25	2	4	271
Baylor University College of Medicine Affiliated Hospitals							
Veterans Admin. Hospital [1-3]	Houston, Texas	I. Chofnas	1,388	82	1	1	270
Blue Ridge Sanatorium	Charlottesville, Va.	C. G. Pearson	729	18	1	1	375
Veterans Admin. Hospital [1-3]	Richmond, Va.	W. T. Thompson, Jr.	1,174	23	..	2	271
Medical College of Virginia—Hospital Division	Richmond, Va.	....	.....	..	..	..	...
Firland Sanatorium [1-3]	Seattle	T. F. Sheehy, Jr.	1,294	48	..	3	300
Veterans Admin. Hospital [1-3]	Madison, Wis.	J K. Curtis	1,852	62	..	8	271
Muirdale Sanatorium [1]	Milwaukee	A. V. Cadden	2,442	15	..	2	265
Veterans Admin. Hospital [1-3]	Milwaukee (Wood), Wis.	M. W. Garry	815	60	1	1	347

25. RADIOLOGY

Residency programs in the following hospitals have been approved by the Council and the American Board of Radiology through the Residency Review Committee for Radiology. These programs are approved for THREE years of training in all phases of Radiology. All programs listed offer three years of training intramurally, or on an integrated basis, or through affiliation with another approved institution. Hospitals listed with the following symbol (#) are approved and offer training of three years intramurally, in addition to participating in an integrated residency program.

Hospitals, 374; Residencies, 1,879

Name of Hospital	Location	Chief of Service	Number of X-Ray Examinations	Number of Radium Treatments	Number of Deep X-Ray Treatments	Number of Superficial X-Ray Treatments	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
UNITED STATES AIR FORCE									
U. S. Air Force Hospital	San Antonio, Texas	H. N. Sturtevant	106,799	17	1,807	99	2	6	...
UNITED STATES ARMY									
Letterman Army Hospital [1-3]	San Francisco	F. W. Leaver	39,783	72	3,440	420	2	6	...
Fitzsimons Army Hospital [1-3]	Denver	P. A. Paden	61,869	44	1,931	174	2	6	...
Army Medical Center [1-3]	Washington, D. C.	J. A. Isherwood	71,273	303	11,158	270	4	12	...
Tripler Army Hospital [1-3]	Honolulu, Hawaii	H. C. Harrell	53,782	6	1,688	813	1	2	...
Brooke Army Hospital [1-3]	San Antonio, Texas	P. Zanca	69,426	35	4,221	115	3	9	...
UNITED STATES NAVY									
U. S. Naval Hospital [1-3]	Oakland, Calif.	L. H. Barber	27,467	12	1,076	499	2	6	...
U. S. Naval Hospital [1]	San Diego, Calif.	S. F. Williams	89,612	35	6,234	94	2	6	...
U. S. Naval Hospital [1-3-163]	Bethesda, Md.	E. R. King	37,431	10	3,182	128	2	6	...
U. S. Naval Hospital [1-3]	Chelsea, Mass.	B. O. Junilla	48,339	3	306	41	1	3	...
U. S. Naval Hospital [1]	St. Albans, N. Y.	C. Gartenlaub	39,415	10	3,604	28	1	3	...
U. S. Naval Hospital [1-3]	Philadelphia	N. L. Yood	41,875	35	1,466	51	2	6	...
UNITED STATES PUBLIC HEALTH SERVICE									
U. S. Public Health Service Hospital [1-3]	New Orleans	D. MacKillop	27,367	...	......	...	1	3	...
U. S. Public Health Service Hospital [1]	Baltimore	W. M. Sennott	14,385	42	2,506	363	1	4	...
Nathional Institutes of Health-Clinical Center [1-3]	Bethesda, Md.	T. Hilbish, J. R. Andrews	29,711	8	3,375	33	1	3	...
U. S. Public Health Service Hospital [1-3-286]	Stapleton, S. I., N. Y.	G. A. Shipman	43,921	...	558	285	2	6	...

Numerical and other references will be found on pages 788 through 790.

25. RADIOLOGY–Continued

Name of Hospital	Location	Chief of Service	Number of X-Ray Examinations	Number of Radium Treatments	Number of Deep X-Ray Treatments	Number of Superficial X-Ray Treatments	First Year Residencies Offered *	Total Residencies Offered *	Beginning Stipend (Month)
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE									
Freedmen's Hospital [1-3]	Washington, D. C.	T. W. Davis	51,429	31	4,271	692	1	3	398
NONFEDERAL AND VETERANS ADMINISTRATION									
Birmingham Baptist Hospitals [1-3]	Birmingham, Ala.	J. W. Underwood	16,068	60	4,558	190	1	2	300
University of Alabama Medical Center									
University Hospital and Hillman Clinic [1-3]	Birmingham, Ala.	J. G. Wood	40,174	239	9,292	554	3	11	143
Veterans Admin. Hospital [1-3]	Birmingham, Ala.	B. Lieberman	29,565	9	1,614	107	1	3	271
University Hospital [1]	Little Rock, Ark.	D. M. Gould	34,051	...	6,116	541	4	12	275
Kern County General Hospital [1-3]	Bakersfield, Calif.	W. H. Leask	27,682	32	847	136	1	3	350
City of Hope Medical Center	Duarte, Calif.	......	......	...	......	...	..	..	...
Orange County General Hospital	Orange, Calif.	......	......	...	......	...	..	..	...
Seaside Memorial Hospital [1-3]	Long Beach, Calif.	H. Prichard	20,106	46	5,678	835	1	3	275
Veterans Admin. Hospital [1-3]	Long Beach, Calif.	B. H. Feder	49,984	4	5,427	1,229	3	9	271
Cedars of Lebanon Hospital [1-3]	Los Angeles	D. Zion, H. Jaffe	24,223	8	3,266	247	2	7	265
Hospital of the Good Samaritan [1-3]	Los Angeles	J. D. Camp	36,425	10	552	140	2	2	275
Los Angeles County Hospital [1]	Los Angeles	G. Jacobson	138,371	335	10,774	978	4	16	259
Queen of Angels Hospital [1-3]	Los Angeles	L. S. Goin	16,194	39	1,970	...	1	3	275
University of California Hospital [1-3]	Los Angeles	A. H. Dowdy	36,169	94	15,937	686	4	13	229
Veterans Admin. Hospital [1-3]	Los Angeles	J. G. Davis	113,992	9	9,638	1,274	3	8	270
White Memorial Hospital [1-3-85]	Los Angeles	W. L. Stilson	14,746	62	3,553	324	1	5	215
Highland-Alameda County Hospital [1-3]	Oakland, Calif.	H. H. Jensen	32,197	41	1,559	...	1	4	200
Stanford Medical Center and Associated Hospitals		......	......	...	......	...	4	12	175
Palo Alto-Stanford Hospital Center	Palo Alto, Calif.	H. S. Kaplan	......	...	......	...	..	..	...
Veterans Admin. Hospital	Palo Alto, Calif.	H. S. Kaplan	......	...	......	...	..	..	...
Sutter Community Hospitals	Sacramento, Calif.	R. C. Ripple	17,409	74	13,817	2,895	1	2	247
San Diego County General Hospital [1-3]	San Diego, Calif.	E. L. Whitehead	22,189	25	1,922	79	1	3	250
Children's Hospital [1-3]	San Francisco	G. G. King	11,196	17	1,534	21	1	2	175
Mount Zion Hospital [1-3]	San Francisco	J. Levitin	16,267	26	1,641	120	1	2	150
St. Mary's Hospital [1-3]	San Francisco	J. Bennett	17,264	11	1,922	85	1	3	200
University of California Hospitals [1]	San Francisco	R. S. Stone	54,303	105	11,458	251	4	13	231
San Francisco Hospital [1-3]	San Francisco	L. H. Garland, A. J. Williams	45,348	20	2,215	105	..	6	220
Santa Clara County Hospital [1-3]	San Jose, Calif.	J. J. McCort	12,811	164	873	68	1	3	260
San Joaquin General Hospital [1-78]	Stockton, Calif.	A. Cove	54,344	12	1,722	...	1	2	200
Harbor General Hospital [1]	Torrance, Calif.	J. H. Woodruff	31,365	88	2,621	238	3	9	250
Penrose Hospital [1-3]	Colorado Springs, Colo.	J. W. McMullen	21,085	5	11,618	3,071	3	7	150
General Rose Memorial Hospital [1-3]	Denver	M. Levine, J. Weiss	15,063	24	1,514	48	1	3	265
Presbyterian Hospital [1-3]	Denver	K. D. A. Allen	11,313	657	7,352	62	1	3	275
St. Joseph's Hospital [1-3]	Denver	E. J. Meister	17,117	24	1,341	...	1	3	200
St. Luke's Hospital [1]	Denver	W. P. Stampfli	18,341	21	3,265	212	1	3	225
University of Colorado Medical Center									
Colorado General Hospital [1-3]	Denver	R. S. Lanier	31,070	55	2,068	314	4	13	180
Denver General Hospital [1-3]	Denver	E. Salzman	39,783	17	1,123	127	..	..	179
Veterans Admin. Hospital [1-3]	Denver	A. L. Daywitt	34,139	67	3,831	368	3	6	254
Bridgeport Hospital [1-3]	Bridgeport, Conn.	J. Esposito	17,561	63	2,013	...	1	3	240
St. Vincent's Hospital [1-3]	Bridgeport, Conn.	R. D. Russo	23,011	25	1,106	86	1	3	300
Hartford Hospital [1-3]	Hartford, Conn.	R. T. Ogden	44,260	61	11,628	...	2	4	125
Yale-New Haven Medical Center									
Grace-New Haven Community Hospital [1-3]	New Haven, Conn.	M. M. Kligerman	43,344	235	7,776	815	3	9	50
Hospital of St. Raphael [3]	New Haven, Conn.	R. Shapiro	22,389	41	8,396	556	2	6	150
St. Mary's Hospital [1-3]	Waterbury, Conn.	K. R. Kaess	19,486	23	2,843	40	1	3	225
Waterbury Hospital [1-3]	Waterbury, Conn.	J. M. James	20,386	32	1,302	69	1	3	225
Delaware Hospital [1-3]	Wilmington, Del.	W. W. Lattomus	21,653	231	3,370	247	1	3	220
District of Columbia General Hospital	Washington, D. C.	......	......	...	......	...	..	..	...
Doctors Hospital [1-3]	Washington, D. C.	F. O. Coe	19,645	63	6,247	840	1	4	300
spital [1-3]	Washington, D. C.	W. E. Baensch	23,870	5,387	4,799	...	2	7	210
sity Hospital [1-3-131]	Washington, D. C.	W. W. Stanbro	23,053	12	6,555	...	2	6	150
[1-3-136]	Washington, D. C.	S. R. Bersack	14,954	...	1,447	36	..	3	270
Washington Hospital Center [1-3]	Washington, D. C.	J. E. Wissler	17,824	7	4,814	191	2	6	215
Jackson Memorial Hospital [1-3]	Miami, Fla.	R. E. Parks	91,347	127	6,971	108	3	9	200
Crawford W. Long Memorial Hospital [1-3]	Atlanta, Ga.	R. A. Elmer	20,552	57	3,413	132	1	3	285
Grady Memorial Hospital [1]	Atlanta, Ga.	H. S. Weens	45,337	48	7,400	160	2	6	100
Piedmont Hospital [1]	Atlanta, Ga.	......	11,140	18	957	75	..	..	...
Veterans Admin. Hospital [1-143]	Atlanta, Ga.	S. Krantz	14,348	1	3,298	358	..	2	271
Eugene Talmadge Memorial Hospital [1-3]	Augusta, Ga.	R. Wigh	17,531	59	3,368	9	3	6	270
Universi	Augusta, Ga.	S. W. Brown	19,220	..	1,321	7	1	2	200
Veteran	Augusta, Ga.	S. M. Roberts	21,257	3	2,495	58	1	1	270
Emory	Emory University, Ga.	H. S. Weens	22,741	73	5,365	2,221	1	3	235
Augustana Hospital [1-3]	Chicago	D. S. Beilin	16,207	..	714	...	2	2	...
Columbus Hospital [3]	Chicago	F. D. Lake, D. J. Lochman	20,357	44	4,623	2,105	2	6	100
Cook County Hospital [1-3]	Chicago	......	120,590	121	15,818	1,548	8	18	200
Illinois Central Hospital [1-3]	Chicago	......	......	...	......	...	..	..	...
Illinois Masonic Hospital [1-3]	Chicago	J. H. Gilmore	26,793	26	2,451	104	3	3	115
Mercy Hospital [1-3]	Chicago	W. Furey	21,656	220	6,778	1,522	1	3	225
Michael Reese Hospital [1-3]	*Chicago*	*B. Levin, E. Uhlmann*	.....	1,696	6,237	188	5	9	125
Mount Sinai Hospital [1-3]	Chicago	J. Nadelhaft, E. Japha	27,184	33	6,634	646	2	7	225
Northwestern University Medical Center									
±Chicago Wesley Memorial Hospital [1-3]	Chicago	A. H. Cannon	45,154	8	4,126	177	2	4	125
Children's Memorial Hospital [1-3]	Chicago	H. White	16,759	..	455	...	..	..	...
±Passavant Memorial Hospital [1-3]	Chicago	R. B. Lewis	16,434	..	1,580	50	1	3	125
±Veterans Admin. Research Hospital [1-3]	Chicago	E. G. Warnick, W. T. Moss	23,018	12	4,742	83	2	6	271
±Evanston Hospital [1-3]	Evanston, Ill.	H. Burkhead, A. Hamann	33,888	28	4,778	239	1	3	225
Presbyterian-St. Luke's Hospital [1-3-411]	Chicago	F. H. Squire	43,892	63	2,815	654	3	9	125
Provident Hospital [1-3]	Chicago	W. P. Quinn	10,438	53	1,055	346	1	3	200
University of Chicago Clinics [1-3]	Chicago	R. D. Moseley, Jr.	41,292	61	12,586	550	4	12	200
University of Illinois Research and Educational Hospitals [1-3]	Chicago	R. A. Harvey	52,217	67	8,885	1,088	3	7	145

Numerical and other references will be found on pages 788 through 790.

25. RADIOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of X-Ray Examinations	Number of Radium Treatments	Number of Deep X-Ray Treatments	Number of Superficial X-Ray Treatments	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
Veterans Admin. West Side Hospital [1-3]	Chicago	S. A. Leader	16,888	2	2,784	5	1	3	270
St. Francis Hospital [1-3]	Evanston, Ill.	A. C. Ledoux	35,130	27	2,099	233	1	3	260
Little Company of Mary Hospital [1-3]	Evergreen Park, Ill.	J. Brosnan	44,872	65	....	...	2	2	200
Veterans Admin. Hospital [1-3-118]	Hines, Ill.	F. Hussey	69,657	698	11,079	346	5	9	270
St. Francis Hospital [1-3]	Peoria, Ill.	P. R. Dirkse, D. F. Anderson	26,256	26	5,047	350	1	3	225
Rockford Memorial Hospital [1-3]	Rockford, Ill.	B. Roseberg	24,411	2,100	....	978	1	3	225
Carle Memorial Hospital [1-3-150]	Urbana, Ill.	C. Gianturco	23,957	3	1,943	136	1	3	250
Clinic Hospital [1-3]	Bluffton, Ind.	R. E. Bishop	21,054	7	957	52	1	3	300
Indiana University [illegible]									
‡Indiana Univer[illegible]	[illegible]polis	J. A. Campbell	29,999	286	7,209	801	5	15	225
‡Marion County General Hospital [1-3]	Indianapolis	W. A. Tosick	43,175	56	2,738	112	1	3	210
‡Veterans Admin. Hospital [1-3]	Indianapolis	J. A. Campbell	21,098	14	1,213	271	..	..	271
Methodist Hospital [1]	Indianapolis	H. C. Ochsner	49,846	56	2,594	2,266	1	3	278
Iowa Methodist Hospital [1-3]	Des Moines, Iowa	A. B. Phillips	17,534	21	1,238	190	1	3	200
Veterans Admin. Hospital [1-3]	Des Moines, Iowa	P. J. Trier	28,354	2	1,438	174	1	3	271
State University of Iowa Hospitals [1-3]	Iowa City	E. F. Van Epps	62,832	128	16,689	...	3	10	175
Veterans Admin. Hospital [1-3]	Iowa City	J. G. Baron	21,022	8	2,366	100	2	4	270
University of Kansas Medical Center [1-3]	Kansas City, Kan.	G. Tice	40,090	71	4,980	980	2	4	125
Veterans Admin. Hospital [1-3]	Kansas City, Mo.	M. F. Westfall	31,191	1	1,331	34	..	..	271
St. Francis Hospital [1-3]	Wichita, Kan.	J. R. Kline	24,721	..	4,097	158	1	3	...
St. Joseph Infirmary [1]	Louisville, Ky.	S. E. Johnson	26,486	117	7,578	306	1	4	210
University of Louisville Hospitals									
Louisville General Hospital [1-3]	Louisville, Ky.	E. L. Pirkey	68,771	52	9,026	1,102	3	9	83
Veterans Admin. Hospital [1-3]	Louisville, Ky.	R. H. Akers	....	..	....	...	..	..	...
Charity Hospital of Louisiana [1]	New Orleans	M. Garcia, C. M. Nice	165,173	380	15,914	1,931	5	14	100
Hotel Dieu-Sister's Hospital [1-3]	New Orleans	H. M. Duhe	21,810	46	2,499	362	1	3	225
Ochsner Foundation Hospital [1-3]	New Orleans	E. Little	57,930	112	3,568	207	1	3	225
Southern Baptist Hospital [1-3]	New Orleans	L. J. Bristow, Jr.	29,035	4	5,234	667	1	3	225
Touro Infirmary [1]	New Orleans	A. Payzant	39,071	33	3,026	3,026	1	3	125
Veterans Admin. Hospital [1-3]	New Orleans	C. P. Oderr	21,206	3	5,900	166	1	3	271
Confederate Memorial Medical Center [1-3]	Shreveport, La.	P. Riley	35,833	77	8,596	344	2	6	125
Central Maine General Hospital [1]	Lewiston, Me.	C. F. Miller	12,148	2	1,745	134	1	1	225
Maine Medical Center [1-3]	Portland, Maine	J. F. Gibbons	26,033	92	2,961	191	2	2	125
Baltimore City Hospitals [1-3]	Baltimore	J. De Carlo	32,426	7	810	137	1	4	75
Johns Hopkins Hospital [1-3]	Baltimore	R. H. Morgan	70,687	262	12,594	12,594	4	16	25
Sinai Hospital [1-3-184]	Baltimore	J. O. Salik	22,156	24	776	......	2	6	110
University Hospital [1]	Baltimore	......	......	...	......	......	..	..	...
Washington County Hospital [1]	Hagerstown, Md.	S. H. Macht	21,050	41	1,878	229	1	1	250
Beth Israel Hospital [1-3-213]	Boston	F. G. Fleischner	23,000	17	1,632	5	2	5	167
Boston City Hospital [1]	Boston	M. Ritvo	121,193	78	5,295	624	..	13	152
Lahey Clinic [1-3-191]	Boston	M. I. Smedal	60,476	7	8,506	42	5	5	200
Massachusetts General Hospital [1-3]	Boston	L. L. Robbins	86,773	165	11,356	3,025	..	..	67
Massachusetts Memorial Hospitals [1-3-206]	Boston	G. Levene	15,539	7	2,209	50	1	4	175
New England Center Hospital [1-3]	Boston	A. Ettinger	27,281	20	514	50	1	3	100
New England Deaconess Hospital [1-3]	Boston	J. H. Marks	22,637	46	5,475	55	1	3	200
Peter Bent Brigham Hospital [1-3-201]	Boston	J. B. Dealy, Jr.	29,226	18	2,406	45	4	12	42
Children's Medical Center [1-3]	Boston	......	......	...	......	......	..	..	...
Veterans Admin. Hospital [1-3]	Boston	E. G. Wissing	37,366	2	3,371	112	2	6	271
Cambridge City Hospital [1-3]	Cambridge, Mass.	F. A. Herzan	15,012	13	402	10	1	2	160
Mount Auburn-Faulkner-Shattuck Associated Hospitals									
Mount Auburn Hospital [1-3]	Cambridge, Mass.	R. Schatzki	13,240	9	1,935	213	1	3	155
Faulkner Hospital [1-3]	Boston	L. E. Hawes	11,484	...	806	50	1	1	200
Lemuel Shattuck Hospital [1-3]	Boston	E. P. Strasser	8,264	15	5,596	53	..	2	262
St. Joseph Mercy Hospital [1-3]	Ann Arbor, Mich.	S. W. Donaldson	32,221	27	2,763	153	1	3	310
University Hospital [1-3-215]	Ann Arbor, Mich.	F. J. Hodges	57,458	6,015	4,791	420	6	18	160
Leila Y. Post Montgomery Hospital [1-3]	Battle Creek, Mich.	S. P. Barden	13,332	17	1,524	...	1	1	275
Grace Hospital [1-3]	Detroit	F. K. Wietersen	37,532	45	5,009	866	2	6	275
Harper Hospital [1-3]	Detroit	L. Reynolds	26,613	214	18,325	102	3	9	275
Henry Ford Hospital [1-3]	Detroit	W. R. Eyler	82,363	123	12,280	146	5	15	265
Mount Carmel Mercy Hospital [1-3]	Detroit	J. M. Grace	53,849	21	2,639	92	1	3	275
Providence Hospital [1-3]	Detroit	W. A. Irwin	22,724	80	4,002	111	1	3	350
Sinai Hospital [1-3]	Detroit	H. Feigelson	15,692	38	2,558	63	1	3	300
Wayne State University Affiliated Hospitals									
Veterans Admin. Hospital [1-3-220]	Dearborn, Mich.	E. E. Levine	28,075	17	2,795	59	2	6	270
Detroit Memorial Hospital [1-3-218]	Detroit	J. E. Lofstrom	15,911	31	124	160	1	3	425
Herman Kiefer Hospital [1-3]	Detroit	S. C. Pidgeon	322,637	......	......	...	2	2	554
Receiving Hospital [1-3-218]	Detroit	J. E. Lofstrom	95,824	75	203	76	6	18	303
Wayne County General Hospital and Infirmary [1-3]	Eloise, Mich.	J. Zbikowski	54,084	5	1,354	...	1	3	385
Hurley Hospital [1-3]	Flint, Mich.	D. R. Limbach	30,469	31	3,901	332	2	6	325
McLaren General Hospital [1]	Flint, Mich.	P. W. Dorsey	44,240	9	1,650	49	2	2	375
St. Joseph Hospital [1]	Flint, Mich.	J. E. Livesay	24,063	47	480	10	2	2	400
Blodgett Memorial Hospital [1-3]	Grand Rapids, Mich.	H. C. Jones	19,742	29	2,992	18	1	3	300
Butterworth Hospital [1-3]	Grand Rapids, Mich.	E. F. Wabby	18,239	32	1,572	228	1	3	300
St. Joseph Mercy Hospital [1-3]	Pontiac, Mich.	J. A. Morton	29,572	33	3,071	...	1	3	375
Swedish Hospital [1-3]	Minneapolis	L. G. Idstrom	28,229	25	3,381	...	1	2	200
University of Minnesota Hospitals [1-3-231]	Minneapolis	H. O. Peterson	59,067	201	15,296	687	4	13	220
Veterans Admin. Hospital [1-3-229]	Minneapolis	J. Jorgens	73,086	19	3,481	96	3	18	271
Mayo Foundation [1]	Rochester, Minn.	C. A. Good	279,681	1,064	28,859	25,020	8	26	175
Charles T. Miller Hospital [1-3]	St. Paul, Minn.	P. C. Swenson	20,153	73,355	5,630	...	1	3	325
University Hospital [1-3]	Jackson, Miss.	R. D. Sloan	26,885	33	3,789	30	2	6	...
University of Missouri Medical Center [1-3]	Columbia, Mo.	G. S. Lodwick	12,841	23	2,588	100	2	6	200
Menorah Medical Center [1-3]	Kansas City, Mo.	D. Dann	17,400	9	748	114	1	3	300
Research and Affiliated Hospitals									
Children's Mercy Hospital [1-3]	Kansas City, Mo.	......	......	...	......	......	..	..	...
Kansas City General Hospital [1-3]	Kansas City, Mo.	J. W. Barry	47,316	54	2,149	207	1	3	220
Research Hospital [1-3]	Kansas City, Mo.	A. B. Smith	18,371	26	1,858	10	3	4	250
St. Joseph Hospital [1-3]	Kansas City, Mo.	H. H. Virden	23,408	120	2,705	75	1	3	250
St. Luke's Hospital [1-3]	Kansas City, Mo.	L. A. Scarpellino, G. W. Schottman	15,382	48	2,359	50	1	3	310
Barnes Hospital [1-3]	St. Louis	H. Wilson	60,300	307	12,518	...	4	14	200

Numerical and other references will be found on pages 788 through 790.

25. RADIOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of X-Ray Examinations	Number of Radium Treatments	Number of Deep X-Ray Treatments	Number of Superficial X-Ray Treatments	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
De Paul Hospital $^{1-3}$	St. Louis	...	......	...	......	......	..	..	...
Homer G. Phillips Hospital $^{1-3}$	St. Louis	W. E. Allen, Jr.	32,158	102	1,764	40	2	5	235
Jewish Hospital $^{1-3}$	St. Louis	H. R. Senturia	21,878	28	3,655	600	1	3	150
St. Louis City Hospital $^{1-3-239}$	St. Louis	D. C. Weir	44,220	30	1,741	23	2	8	234
St. Mary's Group of Hospitals $^{1-3}$	St. Louis	L. Sante	38,233	64	4,182	137	1	3	100
Veterans Admin. Hospitals $^{1-3}$	St. Louis	S. Kamberg	17,000	40	6,000	60	2	6	271
Creighton Memorial-St. Joseph's Hospital $^{1-3}$	Omaha, Neb.	J. F. Kelly, Sr.	21,500	35	3,441	132	1	3	210
Nebraska Methodist Hospital $^{1-3}$	Omaha, Neb.	H. B. Hunt	12,218	104	4,024	613	1	2	300
University of Nebraska Hospital $^{1-3}$	Omaha, Neb.	H. B. Hunt	11,543	68	1,423	114	1	4	200
Veterans Admin. Hospital $^{1-3-240}$	Omaha, Neb.	H. B. Saichek	20,015	...	1,181	33	1	3	270
Mary Hitchcock Memorial Hospital $^{1-3}$	Hanover, N. H.	L. K. Sycamore	31,438	82	4,359	708	2	6	218
Our Lady of Lourdes Hospital $^{1-3}$	Camden, N. J.	B. P. Widmann	23,739	24	1,202	122	1	3	200
Veterans Admin. Hospital $^{1-3-295}$	East Orange, N. J.	J. R. Nahon	23,954	...	2,742	27	1	3	270
Hackensack Hospital $^{1-3}$	Hackensack, N. J.	E. J. Ryan	18,469	11	2,418	297	1	3	150
Jersey City Medical Center $^{1-3}$	Jersey City, N. J.	H. J. Perlberg	49,607	30	5,994	278	3	9	167
Newark Beth Israel Hospital $^{1-3}$	Newark, N. J.	N. J. Furst, L. H. Levenson	42,917	37	7,698	135	1	3	100
Bataan Memorial Methodist Hospital	Albuquerque, N. Mex.	...	......	...	......	......	..	..	...
Albany Hospital $^{1-3}$	Albany, N. Y.	J. F. Roach	34,324	32	8,975	...	1	4	170
Veterans Admin. Hospital $^{1-3}$	Albany, N. Y.	H. Thomas	28,186	2	3,764	50	1	3	271
Beth El Hospital $^{1-3}$	Brooklyn, N. Y.	M. Dannenberg	26,124	64	1,735	...	1	3	150
Brooklyn Hospital $^{1-3}$	Brooklyn, N. Y.	P. J. Lampros	16,136	67	2,172	357	1	3	175
Cumberland Hospital $^{1-3-281}$	Brooklyn, N. Y.	E. Mendelson	25,569	10	461	25	1	2	115
Jewish Hospital $^{1-3}$	Brooklyn, N. Y.	S. Schwartz	30,448	39	2,709	84	2	5	100
Kings County Hospital Center $^{1-3}$	Brooklyn, N. Y.	H. Z. Mellins	152,269	182	9,444	438	4	13	145
Long Island College Hospital $^{1-3}$	Brooklyn, N. Y.	R. L. Pinck	26,845	22	3,048	120	2	4	135
Maimonides Hospital $^{1-3}$	Brooklyn, N. Y.	E. J. Levin	25,538	16	2,075	96	1	3	75
Methodist Hospital $^{1-3}$	Brooklyn, N. Y.	N. F. Bartone	22,480	18	1,493	30	1	3	175
Veterans Admin. Hospital $^{1-3-296}$	Brooklyn, N. Y.	W. Schlein	27,906	7	4,125	114	..	1	270
Buffalo General Hospital $^{1-3}$	Buffalo	G. J. Culver	29,002	36	.....	5,876	2	4	175
Deaconess Hospital $^{1-3}$	Buffalo	R. E. Seibel	15,161	21	5,283	96	1	1	300
Edward J Meyer Memorial Hospital $^{1-3}$	Buffalo	E. G. Eschner	38,789	19	3,188	401	2	7	247
Millard Fillmore Hospital $^{1-3}$	Buffalo	E. H. Schnap	22,104	...	2,616	...	1	3	255
Roswell Park Memorial Institute $^{1-3}$	Buffalo	F. P. Lessman, W. T. Murphy	27,253	270	53,205	3,901	7	13	318
Veterans Admin. Hospital $^{1-3}$	Buffalo	K. Flachs	30,891	...	3,366	200	1	2	271
City Hospital at Elmhurst $^{1-3}$	Elmhurst, N. Y.	P. Strax	46,531	47	524	1,127	2	4	145
Flushing Hospital and Dispensary $^{1-3-290}$	Flushing, N. Y.	M. Pomeranz	18,700	13	456	5	1	3	175
Meadowbrook Hospital $^{1-3}$	Hempstead, N. Y.	H. R. Zatzkin	110,425	35	9,399	369	2	6	225
Queens Hospital Center $^{1-3}$	Jamaica, N. Y.	A. V. Shapiro, L. Goldman	59,935	78	3,972	780	2	7	145
Charles S. Wilson Memorial Hospital $^{1-3}$	Johnson City, N. Y.	B. D. Jay	21,225	9	1,270	402	1	3	225
Long Island Jewish Hospital $^{1-3-297}$	New Hyde Park, N. Y.	B. Epstein	17,420	8	936	34	1	3	100
Bellevue Hospital Center Div. III-New York University College of Medicine $^{1-3}$	New York City	M. H. Poppel, S. Rubenfeld	210,211	2,098	6,335	298	4	11	145
Beth Israel Hospital $^{1-3-284}$	New York City	A. Geffen	17,642	16	1,853	232	2	4	100
Bronx Hospital $^{1-3}$	New York City	A. J. Bernstein, J. R. Freid	25,644	15	2,521	146	1	3	100
Bronx Municipal Hospital Center $^{1-3}$	New York City	M. Elkin	74,983	64	6,984	76	4	12	145
Francis Delafield Hospital $^{1-3}$	New York City	W. Seaman	15,946	20	16,210	847	5	10	145
Hospital for Joint Diseases $^{1-3}$	New York City	M. M. Pomeranz	19,767	12	6,122	90	1	3	80
Lebanon Hospital $^{1-3-422}$	New York City	R. Friedenberg	15,002	17	1,361	...	1	3	125
Lenox Hill Hospital $^{1-3}$	New York City	F. Ghiselin	25,915	15	3,429	79	1	2	240
Lincoln Hospital $^{1-3-276}$	New York City	R. Feig	42,455	3	.....	...	1	3	145
Memorial Center for Cancer and Allied Diseases $^{1-3}$	New York City	R. S. Sherman, J. J. Nickson	61,426	417	.....	40,974	5	19	150
Morristown Memorial Hospital $^{1-3}$	Morristown, N. J.	F. Reed, Jr.	16,042	13	1,983	159	1	1	225
James Ewing Hospital	New York City	...	......	...	.....	...	..	..	...
Memorial Hospital	New York City	...	......	...	.....	...	..	..	...
Montefiore Hospital $^{1-3}$	New York City	H. Jacobson	54,033	30	21,093	1,599	4	12	157
Morrisania City Hospital $^{1-3}$	New York City	J. Fierstein, P. W. Cohen	38,585	31	1,522	187	2	2	115
Mount Sinai Hospital $^{1-3}$	New York City	B. S. Wolf	43,256	73	5,550	...	3	7	75
New York Hospital $^{1-3}$	New York City	J. A. Evans	96,236	142	9,467	878	8	20	164
New York Medical College—Metropolitan Medical Center									
≠Bird S. Coler Hospital	New York City	...	......	...	.....	...	..	..	145
≠Flower and Fifth Avenue Hospitals $^{1-3}$	New York City	F. J. Borrelli	34,120	64	964	142	2	6	125
≠Metropolitan Hospital $^{1-3}$	New York City	F J. Borrelli	75,017	23	5,605	436	2	6	145
New York Polyclinic Medical School and Hospital $^{1-3}$	New York City	W. H. Shehadi	14,332	54	832	171	1	3	125
New York University—Bellevue Medical Center									
University Hospital $^{1-3}$	New York City	M. H. Poppel	16,608	121	1,498	70	3	6	105
Presbyterian Hospital ^{1}	New York City	W. B. Seaman	141,186	69	3,560	89	4	12	250
Roosevelt Hospital ^{3}	New York City	A. A. Dunn	47,617	1,740	2,234	231	2	6	123
St. Luke's Hospital $^{1-3}$	New York City	H. F. Hempel	35,852	28	4,443	236	2	6	100
St. Vincent's Hospital $^{1-3}$	New York City	F. F. Ruzicka, Jr.	41,494	21	5,535	43	2	8	125
Veterans Admin. Hospital (Bronx) $^{1-3}$	New York City	J. Stein, B. Roswit	58,312	98	11,495	684	4	12	271
Veterans Admin. Hospital (Manhattan) $^{1-3}$	New York City	L. R. Lawrence	52,096	65	4,507	78	1	5	271
Genesee Hospital ^{3}	Rochester, N. Y.	G. J. Barron	25,084	22	2,166	261	1	1	150
Rochester General Hospital $^{1-3}$	Rochester, N. Y.	E. F. Merrill	36,829	27	5,948	847	1	3	150
St. Mary's Hospital $^{1-3}$	Rochester, N. Y.	A. V. Winchell, H. H. Forsyth, Jr.	20,832	133	491	42	1	2	225
Strong Memorial-Rochester Municipal Hospital $^{1-3}$	Rochester, N. Y.	G. H. Ramsey	31,784	40	204	26	4	13	117
State University of New York									
Upstate Medical Center $^{1-3}$	Syracuse, N. Y.	C. Hale	55,668	49	4,451	127	2	6	223
Veterans Admin. Hospital $^{1-3}$	Syracuse, N. Y.	E. R. Heitzman, Jr.	18,626	1	1,060	26	1	1	270
Grasslands Hospital $^{1-3}$	Valhalla, N. Y.	A. G. Debbie	19,969	9	1,605	461	1	3	175
North Carolina Memorial Hospital $^{1-3}$	Chapel Hill, N. C.	E. H. Wood	33,149	103	1,826	71	3	9	175

Numerical and other references will be found on pages 788 through 790.

25. RADIOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of X-Ray Examinations	Number of Radium Treatments	Number of Deep X-Ray Treatments	Number of Superficial X-Ray Treatments	First Year Residencies Offered [5]	Total Residencies Offered [5]	Beginning Stipend (Month)
Duke University Affiliated Hospitals									
‡Duke Hospital [1-3]	Durham, N. C.	R. J. Reeves	66,468	200	4,202	301	5	10	102
Veterans Admin. Hospital [1-3]	Durham, N. C.	G. H. Brown	30,879	2	1,073	...	1	2	270
North Carolina Baptist Hospit	N. C.	I. Meschan	30,488	50	394	33	3	10	166
Bismarck Hospital [3]	Dak.	H. M. Berg	31,060	40	3,594	617	1	3	300
Akron City Hospital [1-3]	Akron, Ohio	F. T. Moore	50,860	...	6,522	...	1	4	250
Akron General Hospital [1-3]	Akron, Ohio	C. Miller	27,874	31	4,024	230	1	3	250
Aultman Hospital [1-3]	Canton, Ohio	S. Larson	32,250	30	3,531	630	1	3	275
Mercy Hospital [1-3]	Canton, Ohio	T. J. Dodd	137,589	27	1,469	9	1	2	...
University of Cincinnati College of Medicine Hospital Group									
Cincinnati General Hospital [1-3]	Cincinnati	B. Felson	54,008	...	6,036	198	5	17	100
Good Samaritan Hospital [1-3]	Cincinnati	J. E. McCarthy	33,109	59	5,203	5	1	3	250
Jewish Hospital [1-3]	Cincinnati	L. Rosenberg	25,511	74	1,962	140	1	3	195
Cleveland Clinic Hospital [1-3]	Cleveland	C. R. Hughes	92,003	58	6,063	167	4	10	235
Cleveland Metropolitan General Hospital [1-3]	Cleveland	H. Hauser	41,698	37	3,861	4,096	3	11	150
Huron Road Hospital [1-3]	Cleveland	W. D. Heinrich	37,402	26	1,937	385	1	3	210
Mount Sinai Hospital [1-3]	Cleveland	G. Krause, M. Lubert	27,676	26	4,587	...	1	3	215
St. Luke's Hospital [1-3]	Cleveland	D. D. Brannan	37,126	35	4,201	425	1	3	200
St. Vincent Charity Hospital [1-3]	Cleveland	E. J. O'Malley	31,311	14	1,699	...	1	3	210
University Hospitals [1-3]	Cleveland	H. L. Friedell	67,009	46	3,126	226	3	7	125
Veterans Admin. Hospital [1-3-334]	Cleveland	M. D. Sachs	32,938	11	1,853	100	2	6	271
Ohio State University Hospitals									
University Hospital [1-3]	Columbus, Ohio	S. W. Nelson	53,394	136	10,813	104	5	15	177
Miami Valley Hospital [1-3]	Dayton, Ohio	G. Nicoll	32,500	48	2,952	122	1	3	225
Veterans Admin. Hospital [1-3]	Dayton, Ohio	H. F. Plaut	32,145	4	1,889	165	2	6	271
Elyria Memorial Hospital [1-3]	Elyria, Ohio	D. Russell	15,308	9	630	110	1	1	270
St. Joseph Hospital [1-3]	Lorain, Ohio	D. Russell	23,577	29	2,150	165	1	4	250
Mercy Hospital [1-3]	Toledo, Ohio	M. M. Thompson, Jr.	21,613	40	560	...	1	3	275
Youngstown		E. C. Baker	42,300	60	6,430	1,841	2	6	325
University of		G. R. Ridings	......	...	.....	...	4	12	...
University Hospital [1-3]	Oklahoma City		27,275	8,734	6,755	1,979	..	..	200
Veterans Admin. Hospital [1]	Oklahoma City	S. M. Glasser	36,432	1	3,126	190	2	6	271
Wesley Hospital [1]	Oklahoma City	E. H. Kalmon	17,187	39	2,941	...	1	1	300
St. John's Hospital [1]	Tulsa, Okla.	L. M. Pascucci	27,170	15	4,452	1,139	1	2	175
Providence Hospital [1-3]	Portland, Ore.	S. Rees	20,525	22	615	...	1	3	275
St. Vincent's Hospital [1-3]	Portland, Ore.	S. E. Rees	13,162	15	206	...	2	6	275
University of Oregon									
Medical School Hospitals and Clinics [1-3]	Portland, Ore.	C. T. Dotter	40,103	16	2,879	...	2	6	125
Abington Memorial Hospital [1-3]	Abington, Pa.	C. H. Sillars	31,692	39	3,207	...	1	3	150
Sacred Heart Hospital [1-3]	Allentown, Pa.	K. W. Taber, C. L. Mengel	14,332	348	6,796	447	1	3	225
Bryn Mawr Hospital [3]	Bryn Mawr, Pa.	R. M. Harvey	23,540	29	2,952	491	1	3	200
Geo. F. Geisinger Memorial Hospital [1-3]	Danville, Pa.	J. L. Williams	26,502	40	1,623	4,640	2	4	175
Thomas M. Fitzgerald Mercy Hospital	Darby, Pa.	F. K. Alexander	16,678	64	2,563	260	1	3	100
Hamot Hospital [1-3]	Erie, Pa.	R. D. Bacon	22,511	23	1,776	...	1	3	250
St. Vincent's Hospital [1-3]	Erie, Pa.	R. Bacon	17,941	30	1,091	...	1	3	275
Albert Einstein Medical Center									
Northern Division [1-3]	Philadelphia	J. Gershon-Cohen	27,893	48	8,164	1,043	4	6	125
Southern Division [1-3]	Philadelphia	H. J. Isard	20,851	31	2,534	...	1	3	125
Chester County Hospital [1]	West Chester, Pa.	V. Gershon-Cohen	3,284	14	80	9	1	1	200
Episcopal Hospital [1-3]	Philadelphia	H. Fisher	21,946	36	1,985	285	1	1	150
Germantown Dispensary and Hospital [1-3]	Philadelphia	B. R. Young	23,548	18	4,375	242	1	3	175
Graduate Hospital of the									
University of Pennsylvania [1-3]	Philadelphia	A. Finkelstein	20,790	38	2,296	286	3	3	100
Hahnemann Medical College and Hospital [1-3]	Philadelphia	J. S. Lehman	33,463	238	5,548	350	3	10	200
Hospital of the University of Pennsylvania [1-3]	Philadelphia	E. P. Pendergrass	169,213	94	14,684	3,300	6	24	...
Children's Hospital [1-3]	Philadelphia		......	...	.....	...	..	..	...
Hospital of the Woman's Medical									
College of Pennsylvania [1-3]	Philadelphia	J. Vastine	9,310	17	1,181	2	1	3	130
Jefferson Medical College Hospital [1-3]	Philadelphia	P. J. Hodes	37,870	70	11,828	...	6	12	150
Nazareth Hospital [1-3]	Philadelphia	J. S. Fetter	26,032	2	1,269	236	1	3	300
Pennsylvania Hospital [1-3]	Philadelphia	P. A. Bishop	20,187	57	1,713	320	2	2	100
Philadelphia General Hospital [1-3]	Philadelphia	B. Widmann	172,879	222	7,801	175	4	12	121
Presbyterian Hospital [1-3]	Philadelphia	E. L. Lame	12,481	32	2,440	65	1	3	175
Temple University Hospital [1-3]	Philadelphia	H. M. Stauffer, R. Robbins	45,289	27	8,560	562	3	15	...
Veterans Admin. Hospital [1-3]	Philadelphia	G. T. Wohl	30,484	5	3,201	81	2	7	270
Allegheny General Hospital [1-3]	Pittsburgh	T. B. Childs	37,470	655	975	164	1	4	200
Mercy Hospital [1-3]	Pittsburgh	C. R. Perryman	39,905	44	14,321	1,092	2	6	235
Montefiore Hospital [1-3-365]	Pittsburgh	H. W. Friedman	18,533	...	2,512	132	1	3	225
Health Center Hospitals of the University of									
Pittsburgh School of Medicine [1-3]	Pittsburgh	E. C. Lasser	18,510	18	2,583	34	3	9	125
Children's Hospital [1-3]	Pittsburgh		......	...	.....	...	..	..	...
Elizabeth Steel Magee Hospital	Pittsburgh		......	...	.....	...	..	..	...
Presbyterian Hospital	Pittsburgh		......	...	.....	...	..	..	...
Veterans Admin. Hospital [1-3]	Pittsburgh	S. Lewis	20,998	15	4,550	136	3	6	271
St. Francis General Hospital and									
Rehabilitation Institute [1-3]	Pittsburgh	G. H. Alexander	25,915	32	2,396	20	1	3	240
Western Pennsylvania Hospital [1-3]	Pittsburgh	D. H. Rice	32,677	63	3,072	156	1	3	225
Reading Hospital [1-3]	Reading, Pa.	G. W. Chamberlin	16,261	22	6,270	...	2	6	...
Robert Packer Hospital [1-3]	Sayre, Pa.	J. T. Littleton	28,950	34	5,245	75	2	4	225
San Juan City Hospital [1-3]	San Juan, P. R.	J. Landron Becerra	21,586	4,571	4,038	533	1	3	175
Veterans Admin. Hospital [1-3-406]	San Juan, P. R.	L. Ehrlich	10,485	...	...	...	1	2	318
Dr. I. Gonzalez Martinez Oncologic Hospital [1-3]	San Juan, P. R.		2,490	192	22,840	840	3	9	250
Teaching Hospitals of the Medical College									
of South Carolina [1]	Charleston, S. C.	H. S. Pettit	37,910	51	7,502	17	2	4	137
Medical College Hospital			......	...	.....	...	..	..	...
Roper Hospital			......	...	.....	...	..	..	...
Spartanburg General Hospital	Spartanburg, S. C.	H. E. Plenge	23,821	27	3,116	345	1	1	200
Baroness Erlanger Hospital [1-3]	Chattanooga, Tenn.	C. W. Reavis	33,206	49	3,839	336	1	4	325
Baptist Memorial Hospital [1-3]	Memphis, Tenn.	J. E. Whiteleather	41,283	4	1,539	106	2	7	325
City of Memphis Hospitals [1-3]	Memphis, Tenn.	D. S. Carroll	42,260	52	.....	...	2	6	150

25. RADIOLOGY—Continued

Name of Hospital	Location	Chief of Service	Number of X-Ray Examinations	Number of Radium Treatments	Number of Deep X-Ray Treatments	Number of Superficial X-Ray Treatments	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
Methodist Hospital	Memphis, Tenn.	J. C. King	28,985	40	4,376	406	3	7	325
Veterans Admin. Hospital [1-3]	Memphis, Tenn.	B. E. Greenberg	65,201	7	6,160	271	3	5	271
Vanderbilt University Hospital [1-3]	Nashville, Tenn.	H. C. Francis	31,152	143	1,274	228	3	7	250
Veterans Admin. Hospital [1-369]	Nashville, Tenn.	D. E. Sherman	23,433	21	1,734	154	1	3	270
Baylor University Hospital [3]	Dallas	J. E. Miller	33,534	126	10,469	263	2	6	180
Parkland Memorial Hospital [1-3]	Dallas	F. Bonte	48,686	57	2,475	775	2	7	150
St. Paul's Hospital [1-3]	Dallas	M. J. Healy	16,360	32	1,111	...	2	4	150
Veterans Admin. Hospital [1-3-371]	Dallas	B. K. Lovell	22,737	44	3,315	183	2	6	271
University of Texas Medical Branch Hospitals [1-3]	Galveston, Texas	R. Cooley	71,916	139	8,277	...	3	9	100
Baylor University College of Medicine Affiliated Hospitals									
Jefferson Davis Hospital [1-3]	Houston, Texas	V. P. Collins	51,711	49	1,407	105	2	5	83
Methodist Hospital [1-3]	Houston, Texas	C. H. Burge	21,601	9	1,780	...	..	2	225
Veterans Admin. Hospital [1-3]	Houston, Texas	H. L. Barton	49,091	14	3,674	97	1	3	270
Hermann Hospital [1-3-376]	Houston, Texas	L. M. Vaughan	48,213	42	3,880	149	2	4	125
St. Joseph's Hospital [3-376]	Houston, Texas	C. W. Yates	29,124	23	2,464	13	1	1	220
University of Texas M. D. Anderson Hospital and Tumor Institute [1-3]	Houston, Texas	G. H. Fletcher	21,062	651	32,550	1,181	1	9	220
University of Texas Post Graduate Medical School Affiliated Hospitals									
Baptist Memorial Hospital [1-3]	San Antonio, Texas	D. Jones	15,208	81	1,230	106	1	3	200
Robert B. Green Memorial Hospital [1-3]	San Antonio, Texas	B. B. Markette	30,485	28	1,511	34	1	3	200
#Santa Rosa Hospital [1-3]	San Antonio, Texas	A. Thaggard	23,387	33	2,326	71	1	3	200
Scott and White Memorial Hospitals [1-3]	Temple, Texas	A. W. Sommer	45,177	87	4,723	410	1	5	300
University of Utah Affiliated Hospitals									
Dr. W. H. Groves Latter-Day Saints Hospital [1-3]	Salt Lake City	E. R. Crowder	13,575	...	687	...	1	3	275
Holy Cross Hospital [1-3]	Salt Lake City	R. R. Meyer	10,266	9	1,900	...	1	1	275
St. Mark's Hospital [1]	Salt Lake City	H. P. Plenk	9,240	27	2,120	77	..	..	...
#Salt Lake County General Hospital [1-3-91]	Salt Lake City	W. R. Christensen	18,900	48	2,654	99	2	6	240
Veterans Admin. Hospital [1-3]	Salt Lake City	D. W. Stowell	27,836	...	.....	...	2	6	240
University of Vermont Affiliated Hospitals									
DeGoesbriand Memorial Hospital [1-3]	Burlington, Vt.	F. Van Buskirk	13,869	3	1,125	9	1	4	250
Mary Fletcher Hospital [1-3-200]	Burlington, Vt.	A. B. Soule, Jr.	19,617	59	5,381	31	2	5	250
University of Virginia Hospital [1-3]	Charlottesville, Va.	V. W. Archer	42,776	75	13,922	450	3	9	100
De Paul Hospital [1-3]	Norfolk, Va.	J. Foster	19,421	22	2,689	299	1	3	210
Norfolk General Hospital [1-3]	Norfolk, Va.	C. P. Wisoff	27,204	44	2,032	82	1	4	200
Medical College of Virginia—Hospital Division [1-3]	Richmond, Va.	F. B. Mandeville	46,450	131	3,318	368	1	5	75
Veterans Admin. Hospital [1-3-298]	Richmond, Va.	W. H. Mendel	34,782	1	2,564	...	2	6	271
Providence Hospital [1-3]	Seattle	E. A. Addington	17,408	15	808	121	1	2	300
University of Washington Affiliated Hospitals									
King County Hospital Unit No. 1 (Harborview)	Seattle	.....	......	...	.....	...	..	..	...
University Hospital	Seattle	.....	......	...	.....	...	..	..	...
Veterans Admin. Hospital	Seattle	.....	......	...	.....	...	..	..	...
Virginia Mason Hospital [1-3]	Seattle	T. Carlile	34,685	76	5,779	755	1	3	250
Sacred Heart Hospital [1-3]	Spokane, Wash.	C. A. Stevenson	18,572	30	1,026	54	2	3	250
University Hospitals [1-3]	Madison, Wis.	L. W. Paul	45,210	179	8,532	354	4	12	100
Columbia Hospital [1-3-400]	Milwaukee	S. A. Morton	23,257	35	3,342	836	1	1	270
Evangelical Deaconess Hospital [1-3]	Milwaukee	A. Melamed	29,058	31	4,806	186	1	3	300
Milwaukee County Hospital [1-3]	Milwaukee	J. R. Amberg, M. Greenberg	31,453	29	7,232	165	2	6	216
Milwaukee Hospital [1-3]	*Milwaukee*	*J. Armbruster*, H. W. Hefke	33,260	145	7,218	405	1	3	270
Mount Sinai Hospital [1-3]	Milwaukee	M. Moel	13,589	43	1,820	114	1	3	...
St. Joseph's Hospital [1]	Milwaukee	G. Sengpiel	21,957	25	4,722	194	1	3	300
St. Luke's Hospital [1-3]	Milwaukee	H. Wright	17,111	22	2,900	...	1	3	325
Veterans Admin Hospital [1-3-403]	Milwaukee, (Wood) Wis.	R. V. McAllister	41,237	1	4,984	116	2	4	271

26. SURGERY

Residency programs in the following hospitals have been approved by the Council, the American Board of Surgery and the American College of Surgeons, through the Conference Committee on Graduate Training in Surgery, for FOUR OR MORE years of training, designed to qualify the trainee for examination by the American Board of Surgery as a Group I candidate.

Hospitals, 340; Residencies, 4,310

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
UNITED STATES AIR FORCE							
U. S. Air Force Hospital	San Antonio, Texas	D. S. Wenger	5,538	46	3	12	...
UNITED STATES ARMY							
Letterman Army Hospital [1-3]	San Francisco	J. E. Graham	2,350	26	3	12	...
Fitzsimons Army Hospital [1-3]	Denver	P. A. Bergman	717	27	2	8	...
Army Medical Center [1-3-383]	Washington, D. C.	J. H. Forsee	989	39	4	16	...
Tripler Army Hospital [1-3]	Honolulu, Hawaii	W. F. Bowers	5,696	10	3	12	...
William Beaumont Army Hospital [1-3]	El Paso, Texas	R. L. Rhea, Jr.	2,263	16	2	6	...
Brooke Army Hospital [1-3]	San Antonio, Texas	W. W. Nichol	2,440	41	4	16	...
UNITED STATES NAVY							
U. S. Naval Hospital [1-3]	Oakland, Calif.	M. L. Gerber	2,590	39	2	8	...
U. S. Naval Hospital [1]	San Diego, Calif.	J. M. Hanner	2,974	48	2	8	...
U. S. Naval Hospital	Great Lakes, Ill.	S. Ede	1,594	11	1	4	...
U. S. Naval Hospital [1-3]	Bethesda, Md.	R. B. Brown	2,488	57	2	8	...
U. S. Naval Hospital [1-3]	Chelsea, Mass.	L. L. Haynes	2,792	25	1	4	...

Numerical and other references will be found on pages 788 through 790.

26. SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [3]	Total Residencies Offered [3]	Beginning Stipend (Month)
U. S. Naval Hospital [1]	St. Albans, N. Y.	J. J. Timmes	1,183	15	2	8	...
U. S. Naval Hospital [1]	Philadelphia	P. J. McNamara	2,165	35	2	8	...
U. S. Naval Hospital [1-3]	Portsmouth, Va.	J. J. Zuska	2,634	26	2	8	...
UNITED STATES PUBLIC HEALTH SERVICE							
U. S. Public Health Service Hospital [1-3]	San Francisco	W. A. Williamson	1,568	25	1	4	...
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE							
Freedmen's Hospital [1-3-126]	Washington, D. C.	B. Syphax	1,357	27	3	13	208
NONFEDERAL AND VETERANS ADMINISTRATION							
University of Alabama Affiliated Hospitals							
University Hospital and Hillman Clinic [1-3]	Birmingham, Ala.	C. Lyons	3,400	87	10	32	143
Veterans Admin. Hospital [1-3]	Birmingham, Ala.	C. F. Zukoski	622	17	5	10	271
Lloyd Noland Hospital [1-3]	Fairfield, Ala.	J. M. Slaughter	2,237	11	2	5	250
Maricopa County General Hospital [1-3]	Phoenix, Ariz.	M. Wood	618	21	2	6	300
University Hospital [1]	Little Rock, Ark.	J. H. Growdon	2,639	33	5	10	275
Veterans Admin. Hospital [1-3-77]	Little Rock, Ark.	R. J. Lipin	3,021	73	2	8	270
General Hospital of Fresno County [1-3-79]	Fresno, Calif.	B. H. Evans	2,458	88	2	6	300
Veterans Admin. Hospital [1-3-87-88]	Long Beach, Calif.	J. A. Weinberg	1,635	32	3	12	271
Cedars of Lebanon Hospital [1-3]	Los Angeles	H. Lippman, L. Morgenstern	5,762	51	4	9	265
Los Angeles County Hospital [1]	Los Angeles	C. J. Berne	7,327	169	4	16	259
University of California Hospital [1-3-425]	Los Angeles	W. P. Longmire, Jr.	1,209	78	2	8	229
Veterans Admin. Hospital [1-3-99]	Los Angeles	J. S. Clarke	3,291	98	10	22	270
White Memorial Hospital [1-3-83]	Los Angeles	A. I. Kugle	1,611	29	1	8	215
Highland-Alameda County Hospital [1-3-102]	Oakland, Calif.	E. M. Taylor	1,480	48	8	16	200
Kaiser Foundation Hospital [1-3]	Oakland, Calif.	A. L. Baritell	2,382	89	4	10	315
Veterans Admin. Hospital [3]	Oakland, Calif.	J. V. Smith	2,604	126	3	12	270
Stanford Medical Center and Associated Hospitals		J. G. Allen	....	..	5	5	175
Palo Alto-Stanford Hospital Center	Palo Alto, Calif.		....	..	..	..	...
Veterans Admin. Hospital	Palo Alto, Calif.		....	..	..	..	...
San Diego County General Hospital [1]	San Diego, Calif.	O. M. Hillenbrand	901	44	4	10	250
Kaiser Foundation Hospital [1-3]	San Francisco	D. W. Barrow	2,481	52	3	10	200
Mount Zion Hospital [1-3]	San Francisco	L. D. Roserman	2,740	70	3	7	150
San Francisco Hospital							
Stanford University Service [1]	San Francisco	C. Mathewson	1,355	31	..	..	220
University of California Service [1]	San Francisco	C. Lyon	1,223	39	7	10	220
Southern Pacific General Hospital [1-3]	San Francisco	W. L. Newberg	2,754	12	2	9	175
University of California Hospitals [1-108]	San Francisco	L. Goldman	1,776	53	6	26	231
Veterans Admin. Hospital [1-3-110]	San Francisco	J. L. Wilson	1,349	34	3	12	271
Santa Clara County Hospital [1-3]	San Jose, Calif.	G. B. Armanini	787	34	2	7	260
Santa Barbarba General Hospital-Santa Barbara Cottage Hospital [1-3]	Santa Barbara, Calif.	J. R. Rydell, L. G. Fiske	3,810	41	4	9	200
San Joaquin General Hospital [1]	Stockton, Calif.	W. Brock	1,544	69	2	7	260
Harbor General Hospital [1]	Torrance, Calif.	R. A. Weber	1,414	70	4	14	259
St. Joseph's Hospital [1-3-118]	Denver	W. B. Condon	2,171	15	3	8	200
University of Colorado Medical Center							
Colorado General Hospital [1-3]	Denver	H. Swan	1,448	73	4	16	180
Denver General Hospital [1-3]	Denver	D. Watkins	1,672	77	..	..	179
Veterans Admin. Hospital [1-3]	Denver	B. Eiseman	2,110	45	5	16	254
Bridgeport Hospital [1-3-294]	Bridgeport, Conn.	J. F. Nolan	3,604	50	1	4	240
St. Vincent's Hospital [1-3]	Bridgeport, Conn.	W. H. Curley	8,038	73	2	8	300
Hartford Hospital [1-3]	Hartford, Conn.	W. A. Standish	6,275	67	8	20	125
St. Francis Hospital [1-3]	Hartford, Conn.	L. A. St. John	4,038	58	2	8	175
New Britain General Hospital [1-3]	New Britain, Conn.	B. B. Clark	5,221	38	1	4	210
Yale-New Haven Medical Center							
Grace-New Haven Communtiy Hospital [1-3]	New Haven, Conn.	G. E. Lindskog, C. C. Bishop	3,616	70	8	25	50
Veterans Admin. Hospital [1-3]	West Haven, Conn.	W. W. Lindenmuth	2,003	55	3	9	254
Veterans Admin. Hospital [1-3-123]	Newington, Conn.	P. W. Fenney	977	21	4	10	270
Waterbury Hospital [1-3]	Waterbury, Conn.	A. E. Herrmann	6,923	62	1	4	225
Delaware Hospital [1-3]	Wilmington, Del.	D. J. Preston	3,275	81	2	5	220
Memorial Hospital [1-3]	Wilmington, Del.	J. C. Pierson	3,951	43	1	4	225
District of Columbia General Hospital [1-3]	Washington, D. C.	B. Blades, R. Coffey	1,711	49	4	12	233
Georgetown University Service			....	..	..	..	...
George Washington University Service			....	..	..	..	...
Georgetown University Hospital [1-3-128]	Washington, D. C.	R. J. Coffey	2,873	71	10	21	175
George Washington			....	..	..	..	...
University Hospital [1-3-134]	Washington, D. C.	B. Blades	6,132	80	5	11	150
Providence Hospital [3]	Washington, D. C.		....	..	..	..	...
Veterans Admin. Hospital [1-3-135]	Washington, D. C.	J. G. Lee	1,224	35	3	9	270
Washington Hospital Center [1-3-125]	Washington, D. C.	E. A. Gould	2,389	36	8	17	215
Veterans Admin. Hospital [1-3-141]	Coral Gables, Fla.	M. W. Wolcott	2,445	114	5	14	250
Duval Medical Center [1-3]	Jacksonville, Fla.	K. A. Morris	2,719	49	4	10	200
St. Vincent's Hospital [1-3]	Jacksonville, Fla.	A. C. Williams	5,323	41	4	10	325
Jackson Memorial Hospital [1-3]	Miami, Fla.	J. J. Farrell	4,868	90	12	27	200
Grady Memorial Hospital [1]	Atlanta, Ga.	I. A. Ferguson	4,816	89	12	30	100
Piedmont Hospital [1]	Atlanta, Ga.	F. W. McRae	4,110	18	1	4	290
St. Joseph's Infirmary [1-3]	Atlanta, Ga.	D. Shepard	4,803	41	3	8	270
Veterans Admin. Hospital [1-148]	Atlanta, Ga.	J. C. Thoroughman	1,249	30	5	21	271
Medical College of Georgia Hospitals							
Eugene Talmadge Memorial Hospital [1-3]	Augusta, Ga.	W. H. Moretz	746	37	6	17	250
University Hospital [1-3]	Augusta, Ga.	G. Kelly	2,409	28	2	5	200
Veterans Admin. Hospital [1-3]	Augusta, Ga.	C. M. Rhode	1,340	41	3	6	270
Emory University Hospital [1-3-145]	Emory University, Ga.	J. D. Martin, Jr.	4,798	27	6	7	235
Queen's Hospital [1-3]	Honolulu, Hawaii	J. E. Strode	2,730	24	2	7	150
Cook County Hospital [1-3]	Chicago	K. Meyer	14,165	272	8	31	140
Illinois Central Hospital [1-3]	Chicago	C. C. Guy	3,337	26	1	4	285
Michael Reese Hospital [1-3]	Chicago	N. N. Crohn	3,054	38	3	10	125
Mount Sinai Hospital [1-3]	Chicago	E. I. Greene	3,321	22	2	8	225
Northwestern University Medical Center							
Chicago Wesley Memorial Hospital [1-3]	Chicago	W. G. Maddock	2,972	43	5	8	125
Passavant Memorial Hospital [1-3]	Chicago	L. Davis	1,576	23	6	7	125
Veterans Admin. Research Hospital [1-3]	Chicago	F. W. Preston	1,384	52	5	14	271
Evanston Hospital [1-3]	Evanston, Ill.	J. M. Dorsey	2,431	35	1	3	225

Numerical and other references will be found on pages 788 through 790.

26. SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Monthly)
Presbyterian-St. Luke's Hospital [1-3-111]	Chicago	E. J. Beattie, Jr.	2,418	51	6	24	125
University of Chicago Clinics [1-3]	Chicago	D. E. Clark	2,544	134	4	18	200
University of Illinois Research and Educational Hospitals [1-3]	Chicago	W. H. Cole	2,063	70	3	12	165
Veterans Admin. West Side Hospital [1-3-166]	Chicago	M. I. Gibbel	1,742	66	3	12	270
St. Francis Hospital [1-3]	Evanston, Ill.	D. P. Slaughter	3,527	36	2	8	250
Veterans Admin. Hospital [1-3-151]	Hines, Ill.	C. B Puestow	3,481	144	8	32	270
Indiana University Medical Center Affiliated Hospitals							
Indiana University Medical Center Hospital [1]	Indianapolis	H B. Schumaker	1,268	82	8	12	225
Veterans Admin. Hospital [1-3]	Indianapolis	L. R. Radigan	2,046	86	..	..	271
Marion County General Hospital [1-3]	Indianapolis	H. G. Becker	1,825	55	3	12	210
Iowa Methodist Hospital [1-3-167]	Des Moines, Iowa	J. B. Priestley	3,948	41	2	8	240
Veterans Admin. Hospital [1-3]	Des Moines, Iowa	L. T. Palumbo	3,504	41	4	16	271
State University of Iowa Hospitals [1-3]	Iowa City	R. T. Tidrick	2,418	96	8	23	175
Veterans Admin. Hospital [1-3]	Iowa City	E. S. Brintnall	1,831	76	6	12	270
University of Kansas Medical Center [1-3]	Kansas City, Kan.	F. Allbritten	1,597	99	6	20	125
Veterans Admin. Hospital [1-3]	Kansas City, Mo.	G. A. Higgins	2,069	52	..	..	271
St. Joseph Hospital [1-3-171]	Lexington, Ky.	F. M. Massie	1,629	23	3	10	210
University of Louisville Medical Center							
Children's Hospital	Louisville, Ky.	H. B. Lynn	3,598	25	1	4	83
Louisville General Hospital [1-3]	Louisville, Ky.	R. J. Noer	1,920	71	7	22	83
Waverly Hills Tuberculosis	Ky.	H. T. Ransdell, Jr.	81	7	..	..	...
St. Joseph Infirmary [1]	Ky.	J. T. Giannini	7,559	50	4	10	210
Veterans Admin. Hospital [1-3]	Louisville, Ky.	J. E. Hamilton	1,134	38	4	13	270
Charity Hospital of Louisiana							
Independent Unit [1]	New Orleans	R. Kahle	2,178	43	3	12	100
Louisiana State University Unit [1-7]	New Orleans	J. D. Rives	3,624	86	6	24	100
Tulane University Unit [1]	New Orleans	O. Creech	2,785	109	6	24	100
Ochsner Foundation Hospital [1-3-178]	New Orleans	A. Ochsner	4,473	42	4	16	225
Veterans Admin. Hospital [1-3]	New Orleans	L. K. Richardson	1,789	68	6	12	271
Confederate Memorial Medical Center [1-3]	Shreveport, La.	P. D. Abramson	3,247	42	6	17	125
Maine Medical Center [1-3]	Portland, Maine	J. M. Parker	2,337	31	2	8	125
Baltimore City Hospitals [1-3]	Baltimore	M. M. Ravitch	1,044	59	6	17	75
Church Home and Hospital [1-3]	Baltimore	O. C. Brantigan	1,056	17	4	10	200
Franklin Square Hospital [1-3]	Baltimore	H. E. Wilgis	2,599	31	3	6	225
Johns Hopkins Hospital [1-3]	Baltimore	A. Blalock	4,517	79	4	14	25
Maryland General Hospital [1-3]	Baltimore	R. Z. Pierpont	4,498	38	4	10	225
Mercy Hospital [1-3]	Baltimore	D. J. Pessagno	3,002	24	2	6	275
Sinai Hospital [1-3]	Baltimore	A. M. Seligman	2,786	40	6	13	110
Union Memorial Hospital [1-3]	Baltimore	E. S. Stafford	5,588	62	4	9	215
University Hospital	Baltimore	....	....	..	..	..	...
Prince George's General Hospital [1-3]	Cheverly, Md.	S. Schwartzbach	4,533	29	2	8	200
Veterans Admin. Hospital [1-3-186]	Fort Howard, Md.	J. M. Miller	1,023	37	4	10	271
Veterans Admin. Hospital [1-3-187]	Perry Point, Md.	R. T. Shackleford	764	20	1	4	270
Beth Israel Hospital [1-3-213]	Boston	J. Fine	2,638	38	..	17	167
Boston City Hospital							
I Surgical Service [1-3]	Boston	C. G. Child	2,090	57	8	26	132
III Surgical Service [1-3-213]	Boston	J. J. Byrne	2,128	46	8	27	132
V Surgical Service [1-3-205]	Boston	J. E. Dunphy	2,036	69	7	21	132
Carney Hospital [3]	Boston	J. J. Todd	6,517	79	5	14	175
Massachusetts General Hospital [1-3]	Boston	E. D. Churchill	6,302	..	..	..	67
Massachusetts Memorial Hospitals [1-3]	Boston	R. Smithwick	1,611	24	6	22	175
New England Center Hospital [1-3]	Boston	H. F. Rheinlander	2,418	25	5	15	100
Peter Bent Brigham Hospital [1-3-202]	Boston	F. D. Moore	3,476	108	6	20	42
St. Elizabeth's Hospital [1-3-209]	Boston	J. W. Spellman	5,595	56	3	8	125
Veterans Admin. Hospital [1-3-204]	Boston (Jamaica Plain)	H. H. Faxon	2,563	76	8	24	271
Cambridge City Hospital [1-3]	Cambridge, Mass.	J. B. Vernaglia	1,688	42	1	4	160
Quincy City Hospital [1-3]	Quincy, Mass.	J. M. McGowan	2,709	47	1	4	179
Springfield Hospital [1]	Springfield, Mass.	W. F. Hoyt	6,288	111	7	18	125
Memorial Hospital [1-3]	Worcester, Mass.	B. C. Wheeler	1,495	54	2	6	200
St. Vincent Hospital [1-3]	Worcester, Mass.	J. C. McCann	7,946	61	4	9	175
Worcester City Hospital [1-3]	Worcester, Mass.	J. Maroney	2,239	41	4	8	250
St. Joseph Mercy Hospital [1-3]	Ann Arbor, Mich.	E. T. Thieme	1,845	16	4	7	310
University Hospital [1-3-215]	Ann Arbor, Mich.	C. G. Child, III	2,629	103	17	45	160
Detroit Memorial Hospital [1-3]	Detroit	J. Mark	3,829	25	1	4	425
Grace Hospital [1-3]	Detroit	R. P. Reynolds	8,958	130	4	16	275
Harper Hospital [1-3-219]	Detroit	E. A. Osius	3,159	36	12	22	275
Henry Ford Hospital [1-3]	Detroit	L. S. Fallis	9,523	185	20	46	265
Mount Carmel Mercy Hospital [1-3]	Detroit	W. S. Carpenter	10,287	83	6	12	275
St. John Hospital [1-3]	Detroit	C. J. France	3,972	19	1	4	325
Si	Detroit	M. P. Meyers	3,635	38	3	9	300
W ated Hospitals							
[1-3]	Dearborn, Mich.	C. G. Johnston	3,677	86	6	21	270
Receiving Hospital [1-3]	Detroit	C. G. Johnston	16,007	137	10	42	300
Wayne County General Hospital and Infirmary [1-3]	Eloise, Mich.	W. W. Glas	2,934	126	5	17	385
Hurley Hospital [1-3]	Flint, Mich.	A. H. Kretchmar	4,463	70	2	8	325
McLaren General Hospital [1]	Flint, Mich.	E. P. Vary	6,356	38	3	7	375
Blodgett Memorial Hospital	Mich.	D. S. MacIntyre	1,939	33	1	4	300
Butterworth Hospital [1-3]	Mich.	W. McDougal	2,736	38	2	7	300
Highland Park General Hospital [1-3]	Highland Park, Mich.	J. A. Witter	3,671	47	2	8	308
Minneapolis General Hospital [1-3]	Minneapolis	C. R. Hitchcock	1,257	71	3	15	220
University of Minnesota Hospitals [1-3]	Minneapolis	O. H. Wangensteen	1,973	108	7	30	220
Veterans Admin. Hospital [1-3]	Minneapolis	D. J. Ferguson	2,588	96	7	22	271
Mayo Foundation and Clinic [1]	Rochester, Minn.	J. M. Waugh	10,083	117	25	95	175
Ancker Hospital [1-3]	St. Paul	L. D. MacLean	1,752	107	2	8	220
University of Mississippi Medical Center							
University Hospital [1-3]	Jackson, Miss.	J. D. Hardy	1,258	24	7	21	250
Veterans Admin. Hospital [1-3]	Jackson, Miss.	J. H. Conn	1,091	57	..	..	271
University of Missouri Medical Center [1-3]	Columbia, Mo.	H. E. Stephenson	697	17	8	20	200
Kansas City General Hospital [1-3]	Kansas City, Mo.	R. R. Coffey	2,243	112	3	11	220
Barnes Hospital [1-3]	St. Louis	C. A. Moyer	3,204	73	15	34	50
Homer G. Phillips Hospital [1-3]	St. Louis	C. Moyer	2,663	73	12	25	235
Jewish Hospital [1-3]	St. Louis	M. D. Pareira	3,496	35	3	10	150
St. Louis City Hospital [1-3-237]	St. Louis	C. A. McAfee, L. V. Mulligan	2,506	68	10	23	234

Numerical and other references will be found on pages 788 through 790.

26. SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [6]	Total Residencies Offered [7]	Beginning Stipend (Month)
St. Luke's Hospital [1-3]	St. Louis	O. E. Lischer	4,142	57	3	8	250
St. Mary's Group of Hospitals [1-3]	St. Louis	C. R. Hanlon	3,007	51	5	11	100
Veterans Admin. Hospital [1-3]	St. Louis	F. B. Hershey	1,112	50	2	8	271
St. Louis University Unit			....	..	..	..	...
Washington University Unit			....	..	..	..	...
Creighton Memorial-St. Joseph's Hospital [1-3]	Omaha, Neb.	B. R. Walske	5,935	30	1	16	210
University of Nebraska Hospital [1-3-240]	Omaha, Neb.	M. M. Musselman	616	24	3	9	200
Veterans Admin. Hospital [1-3-248]	Omaha, Neb.	W. P. Kleitsch	1,941	47	2	8	270
Dartmouth Medical School Affiliated Hospitals							
Mary Hitchcock Memorial Hospital [1-3]	Hanover, N. H.	R. E. Welsmann	2,441	50	8	21	218
Veterans Admin. Hospital [1-3]	White River Jct., Vt.	W. B. Crandell	2,411	50	8	21	218
Jersey City Medical Center [1-3]	Jersey City, N. J.	E. J. Halligan	5,817	96	8	26	108
Newark Beth Israel Hospital [1-3]	Newark, N. J.	M. Singer	5,715	35	1	4	100
Veterans Admin. Hospital [431]	Albuquerque, N. M.	W. A. Childs	1,879	30	5	15	...
Albany Hospital [1-3-258]	Albany, N. Y.	C. Eckert	3,412	62	7	23	160
Veterans Admin. Hospital [1]	Albany, N. Y.	J. A. Nelson	2,055	75	3	12	271
Beth El Hospital [1-3]	Brooklyn, N. Y.	C. B. Ripstein	3,224	38	3	9	150
Brooklyn Hospital [1-3]	Brooklyn, N. Y.	K. H. MacGregor	4,118	30	4	10	175
Coney Island Hospital [1-3]	Brooklyn, N. Y.	J. E. Hammett	3,744	80	4	10	145
Jewish Hospital [1-3]	Brooklyn, N. Y.	L. Berger	3,833	34	5	11	100
Kings County Hospital Center [1-3-264]	Brooklyn, N. Y.	C. Dennis	5,415	147	8	32	145
Long Island College Hospital [1-3]	Brooklyn, N. Y.	R. A. Mainzer	2,972	50	1	5	156
Maimonides Hospital [1-3]	Brooklyn, N. Y.	A. Hurwitz	3,061	37	5	9	75
Methodist Hospital [1-3]	Brooklyn, N. Y.	A. J. Vosseler	2,456	28	2	5	175
St. John's Episcopal Hospital [1-3]	Brooklyn, N. Y.	C. Dennis	3,098	21	1	4	175
Veterans Admin. Hospital [1-3]	Brooklyn, N. Y.	H. H. LeVeen	1,643	59	8	20	270
Wyckoff Heights Hospital [1-3]	Brooklyn, N. Y.	P. Zoller	2,517	31	3	12	100
Allied Hospitals of the Sisters of Charity [1-3]	Buffalo	F. M. Zaepfel	10,077	77	2	8	235
Buffalo General Hospital [1-3]	Buffalo	J. R. Paine	3,692	71	4	14	175
Edward J. Meyer Memorial Hospital [1-3]	Buffalo	J. D. Stewart	2,124	113	4	15	247
Millard Fillmore Hospital [1-3]	Buffalo	H. N. Kenwell	4,437	42	2	10	285
Veterans Admin. Hospital [1-3-268]	Buffalo	W. M. Chardack	2,310	59	4	14	271
Mary Imogene Bassett Hospital [1-3]	Cooperstown, N. Y.	J. H. Powers	1,125	22	2	5	200
Flushing Hospital and Dispensary [1-3-277]	Flushing, N. Y.	C. N. Baker	4,783	26	1	4	175
Meadowbrook Hospital [1-3]	Hempstead, N. Y.	J. N. Shell	2,015	144	2	8	225
Queens Hospital Center [1-3]	Jamaica, N. Y.	L. J. Morse	3,341	124	4	10	145
Nassau Hospital [1-3]	Mineola, N. Y.	E. T. Montgomery	2,792	52	3	9	325
Long Island Jewish Hospital [1-3]	New Hyde Park, N. Y.	P. Lear	2,167	17	1	4	75
Beekman-Downtown Hospital [1-3]	New York City	S. Mage	1,760	13	3	7	200
Bellevue Hospital Center							
Div. I—Columbia University [1-3-302]	New York City	K. M. Lewis, Sr.	1,728	..	7	17	125
Div. II—Cornell University [1-3-278]	New York City	C. W. Holman	1,756	..	5	18	125
Div. III—New York University College of Medicine [1-3-305]	New York City	J. H. Mulholland	2,682	..	8	18	145
Div. IV—New York University Post Graduate Medical School [1-3-280]	New York City	L. Slattery	2,224	..	2	10	145
Beth Israel Hospital [1-3-284]	New York City	L. Ginzburg	2,370	27	4	7	160
Bronx Hospital [1-3]	New York City	R. Friedlander	2,727	21	4	10	100
Bronx Muncipal Hospital Center [1-3]	New York City	D. State	1,542	89	7	24	145
Harlem Hospital [1-3]	New York City	A. D. Maynard	2,097	27	4	13	145
Knickerbocker Hospital [1-3]	New York City	P. D. Allen	2,302	26	3	10	150
Lenox Hill Hospital [1-3]	New York City	F. Donehue, H. Maier	3,094	25	2	8	180
Montefiore Hospital [1-3]	New York City	E. S. Hurwitt	4,053	70	5	12	187
Mount Sinai Hospital [1-3]	New York City	I. D. Baronofsky	3,835	76	7	21	75
New York Hospital [1-3]	New York City	F. Glenn	4,129	137	9	30	164
New York Medical College—Metropolitan Medical Center							
Flower and Fifth Avenue Hospitals [1-3]	New York City	J. M. Winfield	4,168	37	4	8	125
Metropolitan Hospital [1-3]	New York City	J. M. Winfield	2,016	49	3	11	145
New York Polyclinic Medical School and Hospital [1-3]	New York City	J. E. Hammett	2,408	28	3	12	125
Presbyterian Hospital [1]	New York City	G. H. Humphreys	4,945	64	8	25	250
Roosevelt Hospital [3]	New York City	....	4,214	49	7	16	133
St. Clare's Hospital [1-3]	New York City	J. L. Madden	4,335	55	2	8	200
St. Luke's Hospital [1-3]	New York City	H. A. Zintel	3,882	67	6	15	100
St. Vincent's Hospital [1-3]	New York City	L. M. Rousselot	4,703	117	6	19	125
Veterans Admin. Hospital (Bronx) [1-3-285]	New York City	P. Cooper	1,719	44	5	15	271
Veterans Admin. Hospital (Manhattan) [1-3-279]	New York City	W. F. MacFee	2,076	58	6	20	271
Genesee Hospital [3]	Rochester, N. Y.	E. W. Douglas	3,858	38	4	9	150
Highland Hospital [1-3]	Rochester, N. Y.	T. B. Garlick	3,782	35	2	6	175
Rochester General Hospital [1-3-294]	Rochester, N. Y.	G. R. Bodon	4,078	53	3	10	150
St. Mary's Hospital [1-3]	Rochester, N. Y.	J. H. Remington	1,715	14	2	8	225
Strong Memorial-Rochester Municipal Hospital [1-3-290]	Rochester, N. Y.	W. J. M. Scott	2,942	138	4	14	117
State University of New York							
Upstate Medical Center [1-3]	Syracuse, N. Y.	C. B. Mueller	11,307	149	10	28	233
Veterans Admin. Hospital [1-3]	Syracuse, N. Y.	L. S. Rogers	1,443	35	6	12	236
Grasslands Hospital [1-3]	Valhalla, N. Y.	G. C. Adie	693	35	2	5	175
North Carolina Memorial Hospital [1-3-317]	Chapel Hill, N. C.	N. A. Womack	925	22	8	21	175
Duke Hospital [1-3-316]	Durham, N. C.	D. Hart	2,292	35	8	17	127
North Carolina Baptist Hospital [1-3]	Winston-Salem, N. C.	H. Bradshaw	2,141	26	4	16	166
Akron City Hospital [1-3-318]	Akron, Ohio	S. A. Schlueter	5,050	..	4	12	250
Akron General Hospital [1-3]	Akron, Ohio	R. T. Allison	4,721	42	6	14	250
St. Thomas Hospital [1-3]	Akron, Ohio	A. H. Kyriakides	5,084	51	4	10	250
Christ Hospital [1-3]	Cincinnati	J. R. Meek	2,382	35	2	5	200
Good Samaritan Hospital [1-3-324]	Cincinnati	H. J. Brinker	2,554	21	3	11	250
Jewish Hospital [1-3-324]	Cincinnati	A. I. Grollman	6,254	52	5	12	195
University of Cincinnati College of Medicine Hospital Group							
Cincinnati General Hospital [1-3]	Cincinnati	W. A. Altemeier	2,622	147	10	31	75
Veterans Admin. Hospital [1-3]	Cincinnati	A. Keirle	968	41	..	..	271
Cleveland Clinic Hospital [1-3]	Cleveland	G. Crile, Jr.	1,241	28	12	20	275
Cleveland Metropolitan General Hospital [1-3]	Cleveland	F. A. Simeonn	1,284	52	10	22	150
Fairview Park Hospital [1-3]	Cleveland	R. J. McNamee	2,184	37	3	10	...
Huron Road Hospital [1-3]	Cleveland	H. W. Brown	3,077	43	2	8	210
Lutheran Hospital [1-3]	Cleveland	M. M. Driver	3,502	32	3	9	250
Mount Sinai Hospital [1-3]	Cleveland	S. O. Freedlander	2,624	48	4	10	215
St. Alexis Hospital [1-3]	Cleveland	C. R. Lulenski	5,533	49	4	10	225
St. Luke's Hospital [1-3]	Cleveland	F. S. Cross	4,055	51	2	8	200

Numerical and other references will be found on pages 788 through 790.

26. SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
St. Vincent Charity Hospital [1-3]	Cleveland	F. Vecchio	6,386	96	2	8	210
University Hospitals [1-3-335]	Cleveland	W. D. Holden	4,821	75	8	26	125
Veterans Admin. Hospital [1-3-334]	Cleveland	C. L. Cogbill	1,353	33	8	16	271
Ohio State University Hospitals							
University Hospital [1-3]	Columbus, Ohio	R. M. Zollinger	3,584	82	6	18	177
White Cross Hospital [1-3-340]	Columbus, Ohio	R. Patton	5,051	45	2	5	290
Veterans Admin. Hospital [1-3]	Dayton, Ohio	R. J. Ireton	1,025	54	4	13	271
Maumee Valley Hospital [1-3]	Toledo, Ohio	R. Hotz	770	45	2	5	235
St. Elizabeth Hospital [1-3]	Youngstown, Ohio	J. K. Herald	8,992	51	4	10	300
Youngstown Hospital [1-3]	Youngstown, Ohio	G. G. Nelson	9,647	89	6	14	325
St. Anthony Hospital	Oklahoma City	L. J. Starry	6,658	28	1	3	300
University of [illegible]		J. A. Schilling	....	..	6	20	...
University [illegible]			1,345	25	..	..	200
Veterans Admin. Hospital [1]	Oklahoma City	G. S. Campbell	1,031	60	..	..	271
St. Vincent's Hospital [1-3-358]	Portland, Ore.	A. M. Boyden	1,692	91	2	8	275
University of Oregon Medical School							
Hospitals and Clinics [1-3]	Portland, Ore.	J. E. Dunphy	1,866	79	2	8	125
Veterans Admin. Hospital [1-3]	Portland, Ore.	R. A. Wise	1,413	24	3	12	270
Abington Memorial Hospital [1-3]	Abington, Pa.	C. M. Smyth	2,686	98	1	4	150
Allentown Hospital [1-3]	Allentown, Pa.	R. L. Schaeffer	2,530	54	1	4	225
Bryn Mawr Hospital [3-354]	Bryn Mawr, Pa.	F. R. Robbins	4,400	54	2	5	200
Geo. F. Geisinger Memorial Hospital [1-3]	Danville, Pa.	J. R. Babcock	2,006	28	1	6	175
Hamot Hospital [1-3]	Erie, Pa.	B. [illegible]	4,360	43	1	4	250
Harrisburg Hospital [1-3]	Harrisburg, Pa.	C. [illegible]	5,455	56	1	6	250
Germantown Dispensary and Hospital [1-3]	Philadelphia	S. [illegible]	3,597	71	1	4	175
Graduate Hospital of the University							
of Pennsylvania [1-3]	Philadelphia	H. R. Hawthorne	1,228	17	2	7	100
Hahnemann Medical College and Hospital [1-3]	Philadelphia	J. M. Howard	5,754	56	6	24	75
Hospital of the University of Pennsylvania [1-3]	Philadelphia	I. S. Ravdin	3,649	152	10	29	150
Hospital of the Woman's Medical College							
of Pennsylvania [1-3]	Philadelphia	L. K. Ferguson	1,918	25	2	5	110
Jefferson Medical College Hospital [1-3]	Philadelphia	J. H. Gibbon, Jr.	3,090	68	5	18	100
Lankenau Hospital [1-3-355]	Philadelphia	J. M. Deaver, G. C. Engel	2,277	18	2	8	200
Misericordia Hospital [1-3]	Philadelphia	W. D. O'Sullivan	2,130	43	1	4	250
Pennsylvania Hospital [1-3]	Philadelphia	O. C. King	1,797	56	5	12	95
Philadelphia General Hospital [1-3]	Philadelphia	L. [illegible]	2,639	108	3	10	121
Presbyterian Hospital [1-3]	Philadelphia	O. [illegible]	2,169	51	2	7	175
Temple University Hospital [1-3]	Philadelphia	W. [illegible]	2,436	49	3	14	...
Veterans Admin. Hospital [1-3]	Philadelphia	O. [illegible]	1,464	56	5	14	270
Allegheny General Hospital [1-3]	Pittsburgh	N. K. Hammond	1,508	26	1	4	200
Mercy Hospital [1-3]	Pittsburgh	H. G. Kuehner	4,752	42	3	9	235
Health Center Hospitals of the University of Pittsburgh							
School of Medicine [1-3]	Pittsburgh	*S. P. Harbison*	1,971	52	4	11	125
Children's Hospital			....	..	..	..	...
Presbyterian Hospital			....	..	..	..	...
Veterans Admin. Hospital [1-3-363]	Pittsburgh	F. C. Jackson	2,272	71	7	21	271
Western Pennsylvania Hospital [1-3]	Pittsburgh	G. V. Foster	8,897	110	3	11	225
Robert Packer Hospital [1-3]	Sayre, Pa.	W. C. Beck	2,615	32	1	4	225
York Hospital [3]	York, Pa.	F. M. Weaver	7,157	65	1	4	300
San Juan City Hospital [1-3]	San Juan, P. R.	J. Noya Benitez	1,370	46	4	9	175
Rhode Island Hospital [1-3]	Providence, R. I.	J. M. Beardsley	5,361	47	2	8	125
Veterans Admin. Hospital [1-3-192]	Providence, R. I.	H. W. Harrower	2,195	55	2	12	270
Teaching Hospitals of the Medical College							
of South Carolina [1]	Charleston, S. C.	F. E. Kredel	2,607	49	3	14	137
Medical College Hospital			....	..	..	..	...
Roper Hospital			....	..	..	..	...
Greenville General Hospital [1-3]	Greenville, S. C.	L. Stoneburner	5,310	74	1	4	275
Baptist Memorial Hospital [1-3]	Memphis, Tenn.	R. M. Miles	12,397	73	3	8	325
City of Memphis Hospitals [1-3]	Memphis, Tenn.	H. Wilson	1,919	38	3	13	150
Veterans Admin. Hospital [1-3]	Memphis, Tenn.	R. F. Bowers	2,639	68	9	20	271
Baptist Hospital [1-3]	Nashville, Tenn.	R. G. Hammonds	2,577	4	4	12	300
George W. Hubbard Hospital [1-3]	Nashville, Tenn.	M. Walker	....	23	3	11	125
St. Thomas Hospital [1-3-370]	Nashville, Tenn.	W. R. Cate, Jr.	5,559	34	2	7	200
Vanderbilt University Hospital [1-3]	Nashville, Tenn.	H. W. Scott	2,533	40	4	14	50
Veterans Admin. Hospital [1]	Nashville, Tenn.	R. I. Carlson	2,611	74	3	12	270
Baylor University Hospital [3]	Dallas, Texas	J. W. Duckett	4,008	31	3	9	180
Parkland Memorial Hospital [1-3]	Dallas, Texas	B. Wilson	3,123	51	10	31	150
Veterans Admin. Hospital [1-3-373]	Dallas, Texas	J. P. North	1,347	55	4	12	271
University of Texas Medical Branch Hospitals [1-3]	Galveston, Texas	R. M. Moore	1,290	19	6	18	160
Baylor University Affiliated Hospitals							
Jefferson Davis Hospital [1-3]	Houston, Texas	M. E. DeBakey	1,918	31	6	20	83
Methodist Hospital [1-3]	Houston, Texas	L. L. D. Tuttle	2,576	52	1	[illegible]	220
Veterans Admin. Hospital [1-3]	Houston, Texas	G. L. Jordan	1,824	78	8	[illegible]	270
Hermann Hospital [1-3]	Houston, Texas	G. W. Waldron	5,243	67	2	8	125
Dr. W. H. Groves Latter-Day Saints							
Hospital [1-3]	Salt Lake City	A. M. Nielsen	6,163	40	4	10	275
Salt Lake County General Hospital [1-3-380]	Salt Lake City	W. J. Burdette	1,249	75	4	20	220
Veterans Admin. Hospital [1-3]	Salt Lake City	R. C. Richards	1,133	20	4	20	220
University of Vermont Affiliated Hospitals							
DeGoesbriand Memorial Hospital [1-3]	Burlington, Vt.	A. A. Gladstone	880	11	2	8	200
Mary Fletcher Hospital [1-3]	Burlington, Vt.	A. G. Mackay	2,562	40	2	8	100
University of Virginia Hospital [1-3]	Charlottesville, Va.	W. H. Muller, Jr.	1,876	49	6	16	75
De Paul Hospital [1-3]	Norfolk, Va.	C. J. Devine, Jr.	4,093	41	2	5	200
Norfolk General Hospital [1-3]	Norfolk, Va.	R. L. Payne, Jr.	2,479	26	4	8	215
Medical College of Virginia—Hospital Division [1-3]	Richmond, Va.	D. M. Hume	4,150	93	7	23	75
Veterans Admin. Hospital [1-3]	Richmond, Va.	R. F. MacDonald	1,345	40	2	8	271
Swedish Hospital [1-3]	Seattle	E. B. Speir	7,596	41	6	13	225
University of Washington Affiliated Hospitals							
King County Hospital Unit No. 1 (Harborview) [1-3]	Seattle	H. N. Harkins	1,590	79	7	27	150
University Hospital	Seattle		....	..	..	..	...
Veterans Admin. Hospital [1-3]	Seattle	J. W. Bell	905	28	4	12	271
Virginia Mason Hospital [1-3-387]	Seattle	J. W. Baker	5,468	83	3	12	150
Charleston General Hospital [1-3]	Charleston, W. Va.	V. Skaff	3,069	18	2	8	225
Chesapeake and Ohio Railway Employee's Affiliated Hospitals							
Chesapeake and Ohio Hospital [1-3]	Clifton Forge, Va.	J. M. Emmett	4,201	23	4	9	200
Chesapeake and Ohio Hospital [1-3-322]	Huntington, W. Va.	J. P. Carey	1,920	16	1	4	200

Numerical and other references will be found on pages 788 through 790.

26. SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
University Hospitals [1-3-300]	Madison, Wis.	E. R. Schmidt	2,670	114	5	20	100
Milwaukee County Hospital [1-3]	Milwaukee	E. H. Ellison	3,111	99	8	20	216
Milwaukee Hospital [1-3-302]	Milwaukee	C. S. Rife	4,279	13	2	5	270
Veterans Admin. Hospital [1-3]	Milwaukee (Wood), Wis.	M. B. Smith	3,005	116	2	7	271

Residency programs in the following hospitals have been approved by the Council, the American Board of Surgery and the American College of Surgeons, through the Conference Committee on Graduate Training in Surgery, for THREE years of training, designed to qualify the trainee for examination by the American Board of Surgery as a Group II candidate.

Hospitals, 189; Residencies, 986

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
UNITED STATES ARMY							
Madigan Army Hospital [1-3]	Tacoma, Wash.	W. A. Todd, Jr.	1,587	9	2	6	...
UNITED STATES PUBLIC HEALTH SERVICE							
U. S. Public Health Service Hospital [1-3]	New Orleans	J. L. Elliott	2,173	19	2	5	...
U. S. Public Health Service Hospital [1]	Baltimore	H. D. Fishburn	2,849	46	2	6	...
U. S. Public Health Service Hospital [1-3]	Boston	F. W. Love	1,799	16	1	3	...
U. S. Public Health Service Hospital [1-3]	Stapleton, S. I., N. Y.	P. E. Walker	4,717	36	6	14	...
U. S. Public Health Service Hospital [1-3]	Seattle	J. D. Lane	1,155	23	2	4	...
NONFEDERAL AND VETERANS ADMINISTRATION							
Carraway Methodist Hospital [1]	Birmingham, Ala.	B. M. Carraway	1,027	8	2	4	250
Mobile General Hospital [1-3]	Mobile, Ala.	J. G. Donald	1,263	27	3	6	275
Veterans Admin. Hospital [1-3]	Tuskegee, Ala.	J. M. Cox	757	41	2	6	271
St. Joseph's Hospital [1-3]	Phoenix, Ariz.	W. A. Brewer	7,613	65	1	3	250
Kern County General Hospital [1-3]	Bakersfield, Calif.	C. P. Marvin	1,230	63	4	11	350
California Hospital [1-3]	Los Angeles	J. M. Farris	2,483	30	2	6	225
Hospital of the Good Samaritan [1-3]	Los Angeles	K. W. Blake	7,163	43	2	6	275
Queen of Angels Hospital [1-3]	Los Angeles	J. F. Regan	5,403	58	1	3	275
St. Vincent's Hospital [3]	Los Angeles	L. C. Bennett	6,811	35	1	3	350
Mercy Hospital [1-3]	San Diego, Calif.	T. F. O'Connell	2,918	28	1	3	225
St. Joseph's Hospital [1-3]	San Francisco	E. H. Dickinson	2,679	16	1	3	300
St Luke's Hospital [1-3]	San Francisco	O. H. Pflueger	5,055	19	3	6	325
St. Mary's Hospital [1-3]	San Francisco	T. J. Whalen	2,449	37	3	8	200
Gorgas Hospital [1]	Ancon, C. Z.	E. P. Shirokov	2,477	17	2	6	390
Mercy Hospital [1-3]	Denver	B. E. Grossman	5,536	34	2	4	250
Presbyterian Hospital [1-3]	Denver	K. C. Sawyer	1,716	19	1	4	275
St. Luke's Hospital [1-114]	Denver	G. Wollgast	2,252	26	2	5	225
Colorado State Hospital [1-3-115]	Pueblo, Colo.	H. H. Kerr	577	47	2	3	415
Hospital of St. Raphael [3]	New Haven, Conn.	O. Pelliccia	5,060	46	4	11	150
St. Mary's Hospital [1-3]	Waterbury, Conn.	J. F. Burke	2,843	22	2	5	225
Doctors Hospital [1-3]	Washington, D. C.	C. S. White	4,322	40	1	3	200
Mount Sinai Hospital of Greater Miami [1-3]	Miami Beach, Fla.	R. M. Fleming	3,796	70	3	6	250
Tampa General Hospital [1-3]	Tampa, Fla.	W. M. Myers	3,583	48	3	7	250
Crawford W. Long Memorial Hospital [1-3]	Atlanta, Ga.	C. E. Holloway	5,355	21	6	10	285
Georgia Baptist Hospital [1-3]	Atlanta, Ga.	W. S. Dorough	9,071	63	3	6	305
Macon Hospital [1]	Macon, Ga.	W. W. Baxley	2,921	14	4	8	250
American Hospital [1-3]	Chicago	M. Thorek, P. Thorek	2,610	18	5	8	65
Augustana Hospital [1-3]	Chicago	E. Garside	3,426	51	2	6	200
Grant Hospital [1-3]	Chicago	C. K. Solander	2,789	21	1	3	225
Illinois Masonic Hospital [1-3]	Chicago	L. W. Peterson	1,443	19	4	7	115
Lutheran Deaconess Home and Hospital [3]	Chicago	J. D. Koucky	2,693	10	1	3	200
Mercy Hospital [1-3-155]	Chicago	J. L. Keeley	2,168	46	4	10	225
Provident Hospital [1-3]	Chicago	C. W. Phillips	1,549	28	1	3	200
St. Elizabeth Hospital [3]	Chicago	A. F. Cipolla	6,597	14	1	3	200
St. Joseph Hospital [1-3]	Chicago	F. B. McCarty	1,721	21	1	3	300
St. Mary of Nazareth Hospital [1-3]	Chicago	E. H. Warszewski	2,938	10	3	9	225
St. Francis Hospital [1-3]	Peoria, Ill.	C. D. Branch	4,900	36	1	3	225
Clinic Hospital [1-3]	Bluffton, Ind.	H. D. Caylor	1,451	3	1	3	300
Methodist Hospital [1]	Indianapolis	D. S Megenhardt	5,304	78	2	6	278
St. Vincent's Hospital [1-3]	Indianapolis	W. D. Gatche	1,875	21	1	3	275
St. Elizabeth Hospital [1]	Lafayette, Ind.	R. E. Gery	4,509	16	1	3	275
St. Margaret's Hospital [1]	Kansas City, Kan.	M. V. Laing	8,193	99	1	3	300
St. Francis Hospital [1-3]	Wichita, Kan.	E. S. Brinton	4,807	52	2	6	...
Harlan Memorial Hospital [1-3]	Harlan, Ky.	W. H. Potter	2,480	16	3	9	400
Southern Baptist Hospital [1-3]	New Orleans	W. F. Becker	7,932	32	3	6	225
Touro Infirmary [1]	New Orleans	L. H. Strug	3,955	38	2	6	125
Lutheran Hospital [1-3]	Baltimore	W. E. Gilmore	2,571	23	2	6	220
Provident Hospital and Free Dispensary [1-3]	Baltimore	B Harris, Sr.	1,143	15	4	7	225
St. Agnes Hospital [1-3]	Baltimore	G. Govatos	3,079	28	3	6	260
St. Joseph's Hospital [3]	Baltimore	O C Brantigan	3,765	30	4	10	225
South Baltimore General Hospital [3]	Baltimore	W. J. Sullivan	2,428	21	3	9	200
Beverly Hospital [1-3]	Beverly, Mass.	R. E. Alt	2,705	41	3	8	250
Truesdale Hospital—Fall River General Hospital [1-3]	Fall River, Mass.	C. H. Hawes, D. F. Gallery	2,944	23	2	4	175
Malden Hospital [1-3]	Malden, Mass.	W. E. Garrey	8,021	40	2	3	200
[illegible] [1-3-210]	Newton Lower Falls, Mass.	H. G. Dunphy	3,804	26	1	3	200
[illegible] Hospital [1-3]	Battle Creek, Mich.	E. M. Chandler	1,614	13	1	3	275
[illegible] [1-3]	Detroit	A. Blain, III	445	2	3	5	250
Providence Hospital [1-3]	Detroit	W. G. Quigley	5,497	45	2	5	275
St. Joseph Mercy Hospital [1-3-224]	Detroit	L. B. Saraf	3,649	46	1	2	410
St. Mary's Hospital [1-3]	Grand Rapids, Mich.	F S. Gillett	1,861	14	2	5	300
Bronson Methodist Hospital [1]	Kalamazoo, Mich.	C. M. Hanson	3,542	46	1	4	300
Pontiac General Hospital [1-3]	Pontiac, Mich.	L. C. Sheffield	4,266	47	1	4	350
St. Joseph Mercy Hospital [1-3]	Pontiac, Mich.	C. G. Darling	1,954	9	2	6	375
William Beaumont Hospital [1-3]	Royal Oak, Mich.	H. B. Barker	4,414	21	2	6	300
Saginaw General Hospital [1-3]	Saginaw, Mich.	J. E. Manning	2,802	29	1	3	365
Mount Sinai Hospital [1-3]	Minneapolis	N. Bloom	4,337	34	3	6	220
St. Barnabas Hospital [1-3]	Minneapolis	V. S. Anderson, C. O. Rice	1,583	10	2	2	235
Charles T. Miller Hospital [1-3]	St. Paul	N. L. Leven	3,011	59	1	3	325
Mercy Hospital—Street Memorial [1-234]	Vicksburg, Miss.	G. H. Martin	915	9	1	3	225
Vicksburg Hospital [3]	Vicksburg, Miss.	W. H. Parsons	3,481	21	1	4	100
St. Louis County Hospital [3]	Clayton, Mo.	D. Sauer	1,614	67	2	8	225

Numerical and other references will be found on pages 788 through 790.

26. SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
Menorah Medical Center [1-3]	Kansas City, Mo.	A. Adelman	4,072	24	1	3	300
St. Luke's Hospital [1-3-235]	Kansas City, Mo.	J. H. Gaskins	5,442	27	3	6	310
St. Mary's Hospital [1-3]	Kansas City, Mo.	T. M. Johnson	1,917	24	1	3	350
De Paul Hospital [1-3]	St. Louis	J. W. Thompson	4,900	26	3	6	200
Missouri Baptist Hospital [1-3]	St. Louis	A. R. Dalton	2,175	33	4	8	175
Missouri Pacific Hospital [3]	St. Louis	R. A. Weir	1,895	21	6	12	200
St. John's Hospital [1-3]	St. Louis	G. T. Gafney	5,576	60	4	8	200
Veterans Admin. Hospital [1-3-245]	Lincoln, Neb.	S. P. Brown	1,205	27	2	6	270
Atlantic City Hospital [1-3]	Atlantic City, N. J.	J. H. Mason, III	4,564	50	1	3	200
Cooper Hospital [1-3]	Camden, N. J.	E. R. Ristine	2,861	57	1	3	200
West Jersey Hospital [1-3]	Camden, N. J.	K. L. Athey	1,444	25	1	3	250
Veterans Admin. Hospital [1-3-251]	East Orange, N. J.	A. H. Levy	880	44	3	9	270
Monmouth Medical Center [1-3]	Long Branch, N. J.	O. R. Holters	3,026	53	1	3	200
Burlington County Hospital [1-3]	Mount Holly, N. J.	T. J. Summey	2,005	44	..	4	100
Harrison S. Martland Medical Center [1-3]	Newark, N. J.	C. MacArthur	1,232	39	3	9	160
St. Barnabas Medical Center [1-3]	Newark, N. J.	...	....	..	..	..	...
St. Peter's General Hospital [1-3]	New Brunswick, N. J.	F. M. Clarke	1,618	21	2	5	175
Orange Memorial Hospital [1-3]	Orange, N. J.	C. H. Evans	4,690	41	1	4	150
St. Francis Hospital [1-3]	Trenton, N. J.	G. N. J. Sommer, Jr.	5,127	36	2	5	210
St. Peter's Hospital [3]	Albany, N. Y.	T. I. Tyrrell	5,255	50	2	5	225
Cumberland Hospital [1-3]	Brooklyn, N. Y.	J. J. Gainey	1,922	16	4	8	145
Greenpoint Hospital [1-3]	Brooklyn, N. Y.	S. Schussheim	1,463	12	2	6	145
Lutheran Medical Center [1-3]	Brooklyn, N. Y.	R. P. San Filippo	2,481	20	1	3	135
St. Catherine's Hospital [1-3]	Brooklyn, N. Y.	J. A. McCabe	3,449	6	2	4	125
St. Mary's Hospital [1-3]	Brooklyn, N. Y.	J. Rizzo	1,974	22	1	3	200
Deaconess Hospital [1-3]	Buffalo	E. T. McGroder	4,663	37	2	4	300
Clifton Springs Sanitarium and Clinic [1-3]	Clifton Springs, N. Y.	R. M. Price	842	5	1	3	150
City Hospital at Elmhurst [1-3]	Elmhurst, N. Y.	A. Zimany	1,909	42	3	5	145
Jamaica Hospital [1-3]	Jamaica, N. Y.	E. J. Patterson	2,029	22	1	4	200
Mary Immaculate Hospital [1-3]	Jamaica, N. Y.	H. W. Draffen	3,792	17	4	6	160
Charles S. Wilson Memorial Hospital [1-3]	Johnson City, N. Y.	D. D. Smith	3,483	24	2	6	225
North Shore Hospital [1-3]	Manhasset, N. Y.	J. H. Eckel	2,237	11	1	6	200
Mount Vernon Hospital [1-3]	Mount Vernon, N. Y.	J. F. Bagg	2,930	31	1	3	125
New Rochelle Hospital [1-3]	New Rochelle, N. Y.	G. C. Adie	7,463	30	1	3	225
Fordham Hospital [1-3]	New York City	B. H. Golden	2,621	25	2	6	145
French Hospital [1-3-281]	New York City	H. B. Keyes	2,318	16	1	4	110
Grand Central Hospital [1-3]	New York City	L. Breidenbach	1,740	16	4	10	135
Lincoln Hospital [1-3]	New York City	F. H. Amendola	3,291	59	5	14	145
Morrisania City Hospital [1-3]	New York City	M. Eisenstat	1,160	14	2	6	145
Sydenham Hospital [1-3]	New York City	S. Standard	1,687	7	3	4	145
Ellis Hospital [1-3]	Schenectady, N. Y.	S. F. MacMillan	5,210	66	4	8	150
White Plains Hospital [1-3]	White Plains, N. Y.	E. G. Ramsdell	3,593	32	1	3	175
Charlotte Memorial Hospital [1]	Charlotte, N. C.	A. G. Brenizer, Jr.	2,252	27	1	3	295
Lincoln Hospital [1-3]	Durham, N. C.	H. M. Schiebel	622	4	1	3	175
Watts Hospital [1-3]	Durham, N. C.	J. E. Davis	3,225	23	3	7	300
City Memorial Hospital [1-3]	Winston-Salem, N. C.	H. M. Starling	4,092	25	1	3	315
Aultman Hospital [1-3]	Canton, Ohio	W. M. Dowlin	6,232	57	6	12	275
Mercy Hospital [1-3]	Canton, Ohio	P. E. Smith	6,756	24	4	8	...
St. Mary's Hospital [1-3]	Cincinnati	R. D. Mansfield	2,364	31	1	4	275
Evangelical Deaconess Hospital [1-3]	Cleveland	J. H. Lazzari	2,874	29	3	7	175
St. John's Hospital [1-3]	Cleveland	J. E. Hannibal	4,046	23	2	6	225
Mount Carmel Hospital [1-3]	Columbus, Ohio	W. H. Teachnor	4,817	46	1	4	275
Good Samaritan Hospital [1]	Dayton, Ohio	A. J. Carlson	6,394	34	2	6	285
Miami Valley Hospital [1-3]	Dayton, Ohio	R. Graves	10,159	157	2	6	225
St. Elizabeth Hospital [1-3]	Dayton, Ohio	T. Rab	4,457	28	1	3	275
Marymount Hospital [1-3]	Garfield Heights, Ohio	W. E. Mishler	3,487	39	3	6	200
Lakewood Hospital [1-3]	Lakewood, Ohio	N. W. Thiessen	4,583	24	4	9	200
St. Rita's Hospital [1-3]	Lima, Ohio	C. H. Leech	5,441	36	1	3	325
Mercy Hospital [1-3]	Toledo, Ohio	H. L. Hauman	5,150	80	1	4	275
St. Vincent's Hospital [1-3]	Toledo, Ohio	B. G. Shaffer	6,169	66	2	5	325
Trumbull Memorial Hospital [1-3]	Warren, Ohio	D. A. Miller	4,699	50	1	3	300
Hillcrest Medical Center [1]	Tulsa, Okla.	M. Leibovitz	8,731	55	4	8	200
St. John's Hospital [1]	Tulsa, Okla.	J. B. Thompson	3,163	35	1	3	175
Sacred Heart Hospital [1-3]	Allentown, Pa.	C. A. Holland	6,401	52	1	4	225
St. Luke's Hospital [1-3]	Bethlehem, Pa.	D. P. Walker	4,938	43	1	4	225
Easton Hospital [1-3]	Easton, Pa.	T. C. Zulich, Jr.	1,775	16	1	3	250
St. Vincent's Hospital [1-3]	Erie, Pa.	J. E. O'Brien	5,536	56	2	5	275
Harrisburg Polyclinic Hospital [1]	Harrisburg, Pa.	W. I. McBride	5,733	53	2	5	250
Sacred Heart Hospital [1-3]	Norristown, Pa.	R. Buyers	3,768	31	1	3	350
Albert Einstein Medical Center							
Northern Division [1-3]	Philadelphia	B. Greenspan	3,265	43	4	8	125
Southern Division [1-3]	Philadelphia	A. Ulin	2,564	20	2	8	125
Episcopal Hospital [1-3]	Philadelphia	J. W. Klopp	2,175	34	2	6	150
Frankford Hospital [1-3]	Philadelphia	O. P. Large	2,024	14	1	3	250
Mercy-Douglass Hospital [1-3]	Philadelphia	L. C. Manges	990	20	3	5	200
Methodist Episcopal Hospital [1-3]	Philadelphia	G. Willauer	2,889	24	1	3	150
Nazareth Hospital [1-3]	Philadelphia	J. F. O'Neill	2,989	36	1	3	300
Monteflore Hospital [1-3]	Pittsburgh	S. A. Rosenburg	5,403	42	1	3	225
St. Francis General Hospital and Rehabilitation Institute [1-3]	Pittsburgh	H. E. Feather	11,545	22	4	7	240
Reading Hospital [1-3]	Reading, Pa.	C. B. Rentschler	1,949	43	2	5	...
St. Joseph's Hospital [1-3]	Reading, Pa.	R. R. Impink	1,379	42	1	3	...
Williamsport Hospital [1-3]	Williamsport, Pa.	F. E. Sanford	2,970	40	1	3	225
Bayamon Charity District Hospital [1-3]	Bayamon, P. R.	R. Nido	2,021	56	4	8	250
Damas Hospital [1-3]	Ponce, P. R.	...	....	..	..	..	...
Ponce District General Hospital	Ponce, P. R.	...	....	..	..	..	...
Veterans Admin. Hospital [1-3-406]	San Juan, P. R.	L. A. Passalacqua	2,439	25	2	6	318
Columbia Hospital of Richland County [1]	Columbia, S. C.	G. T. McCutcheon	4,306	34	1	3	175
Spartanburg General Hospital [1]	Spartanburg, S. C.	J. V. Jeffords	8,208	57	3	6	200
Sacred Heart Hospital [1-3]	Yankton, S. Dak.	C. B. McVay	615	5	1	3	300
Baroness Erlanger Hospital [1-3]	Chattanooga, Tenn.	G. Young	2,840	42	8	14	325
University of Tennessee Memorial Research Center and Hospital [1]	Knoxville, Tenn.	C. Zirkle	2,172	31	1	3	320
Methodist Hospital	Memphis, Tenn.	J. M. Aste	7,072	27	2	6	325
St. Joseph Hospital [1-3]	Memphis, Tenn.	W. H. Gragg, Jr.	2,031	17	1	3	325
Brackenridge Hospital [1-3]	Austin, Texas	R. R. Ross	1,898	22	1	4	350
Methodist Hospital [1-3]	Dallas, Texas	B. E. Park	2,877	12	3	7	200

Numerical and other references will be found on pages 788 through 790.

26. SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
St. Paul Hospital $^{1-3}$	Dallas, Texas	....	...	...	..	..	...
St. Joseph's Hospital ^{3}	Houston, Texas	J. P. Barnes	1,963	49	2	4	220
Robert B. Green Memorial Hospital $^{1-3}$	San Antonio, Texas	A. W. Hartman	2,356	71	3	9	170
Scott and White Memorial Hospitals $^{1-3}$	Temple, Texas	T. Speed	3,781	21	3	9	200
Johnston-Willis Hospital $^{1-3}$	Richmond, Va.	F. S. Johns	3,130	15	1	3	250
Jefferson Hospital $^{1-3}$	Roanoke, Va.	H. H. Trout, Jr.	920	3	2	4	175
Beckley Hospital $^{1-3}$	Beckley, W. Va.	H. F. Cooper	914	7	1	4	250
Beckley Memorial Hospital $^{1-3}$	Beckley, W. Va.	R. E. Wilcox	1,033	23	2	8	400
Kanawha Valley Hospital ^{3}	Charleston, W. Va.	J. C. Condry	1,803	8	2	4	200
Memorial Hospital $^{1-3}$	Charleston, W. Va.	B. Bradford, Jr.	2,077	24	2	5	250
Cabell-Huntington Hospital $^{1-3}$	Huntington, W. Va.	S. Schnitt	1,302	656	1	2	250
St. Mary's Hospital $^{1-3}$	Huntington, W. Va.	F. L. Coffey	2,330	6	1	4	275
Veterans Admin. Hospital $^{1-3}$	Martinsburg, W. Va.	I. Harrison	1,559	36	4	7	271
Broaddus Hospital $^{1-3}$	Philippi, W. Va.	H. C. Myers	1,450	25	1	3	200
Ohio Valley General Hospital $^{1-3}$	Wheeling, W. Va.	J. O. Rankin	3,042	61	2	6	300
Madison General Hospital $^{1-3}$	Madison, Wis.	R. P. Sinaiko	3,415	35	2	6	175
Columbia Hospital $^{1-3-397}$	Milwaukee	C. M. Schroeder	2,202	33	1	3	270
Mount Sinai Hospital $^{1-3}$	Milwaukee	R. W. Mann	1,928	10	3	6	...
St. Joseph's Hospital ^{1}	Milwaukee	J. J. Gramling, Jr.	2,363	55	2	6	300

Residency programs in the following hospitals have been approved by the Council, the American Board of Surgery and the American College of Surgeons, through the Conference Committee on Graduate Training in Surgery, for one year of training as an integral part of an approved program of four or more years' duration.

Hospitals, 20; Residencies, 77

NONFEDERAL AND VETERANS ADMINISTRATION

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
Samuel Merritt Hospital ^{1}	Oakland, Calif.	A. J. Hunnicutt	1,680	8	..	..	...
French Hospital ^{1}	San Francisco	W. L. Rogers	3,124	28	3	4	250
Community Hospital of San Mateo County ^{1}	San Mateo, Calif.	K. H. Prindle	574	26	2	5	300
Henrotin Hospital $^{1-3-196}$	Chicago	....	1,176	7	1	1	200
Broadlawns-Polk County Hospital ^{1}	Des Moines, Iowa	W. H. Myerly	1,333	33	..	2	250
Veterans Admin. Hospital ^{1}	Wichita, Kan.	A. H. Hinshaw	1,422	38	2	4	271
Lafayette Charity Hospital $^{1-3}$	Lafayette, La.	J. Rives	2,437	52	..	..	...
Lahey Clinic	Boston	....	....	..	..	..	...
Brockton	Mass.	F. J. Hanley	3,463	24	..	..	...
Mount Aul	Mass.	J. Tartakoff	3,050	42	1	3	155
Lawrence	Mass.	A. L. Davis	903	15	..	4	262
St. Joseph's Hospital $^{1-3}$	St. Paul	C. E. Rea	1,324	15	3	3	250
Ellis Fischel State Cancer Hospital $^{1-3}$	Columbia, Mo.	E. J. Schewe, Jr.	1,516	29	..	6	200
Francis Delafield Hospital $^{1-3}$	New York City	G. H. Humphreys, II	871	91	6	9	145
Memorial Center for Cancer and Allied Diseases $^{1-3}$	New York City	H. T. Randall	7,548	160	..	23	200
James Ewing Hospital	....	....	....	..	..	..	...
Memorial Hospital	....	....	....	..	..	..	...
Veterans Admin. Hospital $^{1-3}$	Durham, N. C.	R. W. Postlethwait	961	26	6	7	270
Children's Hospital ^{1}	Cincinnati	W. A. Altemeier	....	..	..	..	...
Children's Hospital $^{1-3}$	Columbus, Ohio	H. W. Clatworthy, Jr.	2,936	75	2	4	300
Lynchburg General Hospital $^{1-3}$	Lynchburg, Va.	L. G. Richards	1,545	16	..	2	200

Residency programs in the following hospitals have been approved by the Council, the American Board of Surgery and the American College of Surgeons, through the Conference Committee on Graduate Training in Surgery, for additional training following the completion of an approved residency. The American Board of Surgery will give credit for time spent in these services toward fulfillment of the practice requirements for Group II candidates.

Hospitals, 21; Residencies, 110

NONFEDERAL AND VETERANS ADMINISTRATION

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
City of Hope National Medical Center $^{1-3}$	*Duarte, Calif.*	*R. L. Byron, Jr.*	*961*	*72*	..	5	400
Children's Hospital $^{1-3}$	Denver	D. R. Akers	1,335	16	3	3	200
Children's Hospital $^{1-3}$	Washington, D. C.	E. McNamara	1,371	12	..	2	200
Children's Memorial Hospital $^{1-3}$	Chicago	W. J. Potts	2,543	42	..	3	75
Children's Medical Center $^{1-3}$	Boston	R. E. Gross	2,269	84	6	11	42
Pondville Hospital	Walpole, Mass.	E. M. Daland	1,412	153	..	6	527
Westfield State Sanatorium $^{1-3}$	Westfield, Mass.	F. S. Hopkins	708	47	..	3	527
Ellis Fischel State Cancer Hospital $^{1-3}$	Columbia, Mo.	E. J. Schewe, Jr.	1,516	29	..	6	200
Children's Hospital $^{1-3}$	Buffalo	L. J. Leahy	2,172	32	..	4	175
Roswell Park Memorial Institute $^{1-3}$	Buffalo	G. E. Moore	1,077	59	..	13	318
Francis Delafield Hospital $^{1-3}$	New York City	G. H. Humphreys, II	871	91	6	9	145
Memorial Center for Cancer and Allied Diseases $^{1-3}$	New York City	H. T. Randall	7,548	160	..	17	300
James Ewing Hospital	....	....	...	..	..	..	...
Memorial Hospital	....	....	....	..	..	..	...
Presbyterian Hospital (Babies Hospital) ^{1}	*New York City*	*T. V. Santulli*	*924*	*21*	..	1	308
Children's Hospital $^{1-3}$	Columbus, Ohio	H. W. Clatworthy, Jr.	2,936	75	2	4	300
Children's Hospital $^{1-3}$	Philadelphia	C. E. Koop	2,562	50	2	4	67
Children's Hospital $^{1-3}$	Pittsburgh	W. B. Kiesewetter	1,095	23	1	5	175
Dr. I. Gonzalez Martinez Oncologic Hospital $^{1-3}$	San Juan, P. R.	L. A. Vallecillo	498	21	..	2	300
Texas Children's Hospital $^{1-3}$	Houston, Texas	L. W. Able	788	16	..	1	175
University of Texas—M. D. Anderson Hospital and Tumor Institute $^{1-3}$	Houston, Texas	E. C. White	2,201	34	..	8	300
Children's Orthopedic Hospital $^{1-3}$	Seattle	D. Hall	2,273	37	..	3	180

Residency programs in the following hospitals are approved by the Council as offering satisfactory training of ONE or TWO years' duration in preparation for residency training in the surgical specialties only. Applicants intending to qualify for examination by the American Board of Surgery should refer to the lists of approved services on pages 774 through 781 (Surgical Residencies, *J. A. M. A.* *156-432, Sept. 25, 1954*).

Hospitals, 131; Residencies, 353

UNITED STATES ARMY

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
U. S. Air Force Hospital	Wichita Falls, Texas	H. M. Thomas	485	2	..	..	...

UNITED STATES ARMY

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
U. S. Army Hospital $^{1-3}$	Fort Benning, Ga.	R. M. Hardaway	1,704	21	6	6	...
U. S. Army Hospital $^{1-3}$	Fort Campbell, Ky.	C. W. Hoffman, Jr.	1,757	3	3	3	...

Numerical and other references will be found on pages 788 through 790.

26. SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
U. S. Army Hospital [1-3]	Fort Bragg, N. C.	H. A. Conrad	1,819	8	6	6	...
U. S. Army Hospital [1-3]	Fort Belvoir, Va.	D. G. Eisner	3,766	11	4	4	...
NONFEDERAL AND VETERANS ADMINISTRATION							
Good Samaritan Hospital [1]	Phoenix, Ariz.	J. Eisenbeiss	4,817	34	2	2	300
St. Mary's Hospital [1-3]	Tucson, Ariz.	I. M. Chesser	5,226	24	8	8	200
Tucson Medical Center [1-3]	Tucson, Ariz.	D. W. Neubauer	1,154	7	3	3	200
Arkansas Baptist Hospital [1]	Little Rock, Ark.	C. E. Wenger	8,471	45	2	4	325
General Hospital of Riverside County [1]	Arlington, Calif.	....	624	28	3	3	444
Herrick Memorial Hospital [1-3]	Berkeley, Calif.	....	....	..	..	..	...
		....	....	..	..	..	...
Seaside Memorial Hospital [1-3]	Long Beach, Calif.	P. F. Voigt	6,745	57	3	3	275
Presbyterian Hospital—Olmsted Memorial [1-3]	Los Angeles	W. H. Snyder, Jr.	5,833	25	1	1	200
Santa Fe Coast Lines Hospital [1-3]	Los Angeles	L. Chaffin	862	2	3	3	400
Collis P. and Howard Huntington Memorial Hospital [1-3]	Pasadena, Calif.	E. B. Dewey	5,329	31	1	3	300
San Bernardino County Charity Hospital	San Bernardino, Calif.	R. Seavers	903	65	4	5	250
Mary's Help Hospital [1-3]	San Francisco	E. Carlson	1,166	9	1	3	225
St. John's Hospital [1]	San Monica, Calif.	J. F. Roberts	6,501	23	1	1	225
St. Mary-Corwin Hospital [1-3]	Pueblo, Colo.	J. E. A. Connell	5,021	22	3	6	285
Greenwich Hospital [1-3]	Greenwich, Conn.	H. P. Serrell	4,210	34	1	1	150
Hartford Municipal Hospital and Health Center [1-3]	Hartford, Conn.	C. C. Kelly	321	8	2	2	255
Lawrence and Memorial Hospitals [1-3]	New London, Conn	F. B. Hartman	4,336	23	3	3	250
Norwalk Hospital [1-3]	Norwalk, Conn.	H. Genvert	1,634	8	2	2	195
Stamford Hospital [1-3]	Stamford, Conn.	C. Rawls	2,257	27	1	2	150
Eastern Dispensary and Casualty Hospital [3]	Washington, D. C.	J. R. Young	3,495	16	3	3	350
Sibley Memorial Hospital [1-3]	Washington, D. C.	P. S. Putzki	5,682	30	1	3	200
Riverside Hospital	Jacksonville, Fla.	T. Moseley	393	6	1	1	400
St. Luke's Hospital [1-3]	Jacksonville, Fla.	R. W. Thompson	1,820	11	2	2	325
St. Francis Hospital [1-3]	Miami Beach, Fla.	J. Jana	3,477	15	2	2	215
Orange Memorial Hospital [1]	Orlando, Fla.	D. C. Robertson	2,287	31	1	4	325
Mound Park Hospital [1]	St. Petersburg, Fla.	W. Rautenstrauch	1,805	35	1	1	290
Memorial Hospital of Chatham County [1-3]	Savannah, Ga.	J. L. Alexander	885	25	1	3	350
MacNeal Memorial Hospital [1-3]	Berwyn, Ill.	J. L. Grout	2,019	42	2	2	350
Alexian Brothers Hospital [3]	Chicago	....	....	..	..	..	...
Englewood Hospital [3]	Chicago	M. M. Wasick	2,131	10	1	1	200
Hospital of St. Anthony De Padua [1-3]	Chicago	W. R. Sladek	3,001	18	2	2	250
Norwegian-American Hospital [1-3]	Chicago	J. Fowler	3,029	12	3	3	225
Ravenswood Hospital [1-3]	Chicago	E. Fox	1,117	9	2	2	200
St. Anne's Hospital [1-3]	Chicago	P. F. Fox	4,452	27	3	3	250
Woodlawn Hospital [1-3]	Chicago	H. P. Jenkins	1,096	8	..	1	250
Little Company of Mary Hospital [1-3]	Evergreen Park, Ill.	D. G. Sullivan	5,205	74	2	8	200
Community Memorial General Hospital	La Grange, Ill.	R. Stokes	1,974	3	2	2	300
Methodist Hospital of Central Illinois [3]	Peoria, Ill.	W. H. Eastman	5,489	43	2	5	200
St. Anthony Hospital [1-3]	Rockford, Ill.	R. G. Smith	3,181	23	1	3	200
Ball Memorial Hospital [1]	Muncie, Ind.	F. W. McDowell	5,180	46	1	1	250
Mercy Hospital [1-3]	Iowa City	J. W. Dulin	6,889	3	1	1	150
Wesley Hospital [1-3]	Wichita, Kan.	N. Francis	6,211	31	1	1	205
Good Samaritan Hospital [1-3]	Lexington, Ky.	A. E. Grimes	3,608	28	4	8	225
Norton Memorial Hospital [1-3]	Louisville, Ky.	E. G. Grantham	1,540	9	6	6	210
Hotel Dieu-Sister's Hospital [1-3]	New Orleans	M. Salatich	1,656	6	2	4	225
Central Maine General Hospital [1]	Lewiston, Me.	W. V. Cox	3,059	38	1	1	225
Bon Secours Hospital [3]	Baltimore	S. G. Sullivan	1,590	15	1	3	270
New England Hospital [1-3]	Boston	A. Brown	1,716	9	2	2	85
Burbank Hospital [1-3]	Fitchburg, Mass.	F. P. Ross	2,706	37	1	2	200
Evangelical Deaconess Hospital [1-3]	Detroit	T. H. Hunt	1,223	11	2	2	307
Jennings Memorial Hospital [1-3]	Detroit	J. B. Hartzell	338	3	2	2	350
Woman's Hospital [1-3]	Detroit	J. R. Brown	3,378	57	3	3	475
Bon Secours Hospital [3]	Grosse Pointe, Mich.	J. F. Wenzel	3,833	21	1	2	415
Borgess Hospital [1-3]	Kalamazoo, Mich.	G. Callander	2,148	20	2	2	275
Edward W. Sparrow Hospital [1-3]	Lansing, Mich.	J. M. Wellman	1,605	9	1	2	250
Northwestern Hospital [1-3]	Minneapolis	H. Buchstein	3,276	19	2	3	200
Swedish Hospital [1-3]	Minneapolis	J. H. Linner	8,818	44	3	7	200
St. Joseph Hospital [1-3]	Kansas City, Mo.	A. L. Stockwell	4,081	34	1	2	250
Missouri Methodist Hospital [1-3]	St. Joseph, Mo.	J. N. Martin	4,297	43	3	3	225
St. Anthony's Hospital [1-3]	St. Louis	A. Repetto	3,800	30	2	2	200
St. Elizabeth Hospital [1-3]	Lincoln, Neb.	W. W. Carveth, R. F. Mueller	3,711	14	2	2	350
Hackensack Hospital [1-3]	Hackensack, N. J.	A. I. Mader, Jr.	4,144	31	3	3	150
Mountainside Hospital [1-2]	Montclair, N. J.	C. W. Moeckel	3,898	24	1	1	250
Morristown Memorial Hospital [1-3]	Morristown, N. J.	R. Zimmerman	5,041	37	1	1	225
Fitkin Memorial Hospital [1-3]	Neptune, N. J.	M. Q. Hancock	3,836	32	2	2	250
Presbyterian Hospital [1-3]	Newark, N. J.	P. A. O'Connor	5,612	39	3	3	175
St. Michael's Hospital [1-3]	Newark, N. J.	J. J. Connolly	3,242	18	3	3	165
Columbus Hospital [3]	New York City	V. Carabba	1,360	18	1	3	160
Hospital for Joint Diseases [1-3]	New York City	P. Klingenstein	1,598	20	4	4	80
Jewish Memorial Hospital [1-3]	New York City	B. Sherwin	2,220	12	1	1	175
Lebanon Hospital [1-3]	New York City	B. Sherwin	2,320	25	2	3	125
Misericordia Hospital [1-3]	New York City	M. Healy	1,106	17	2	4	125
Mother Cabrini Memorial Hospital [1-3]	New York City	J. P. Alvich	1,512	3	1	3	125
New York Infirmary [1-3]	New York City	L. Loseke	1,296	15	1	2	150
United Hospital [1-3]	Port Chester, N. Y.	G. O. Tremble	3,278	39	2	2	...
St. Agnes Hospital [1-3]	Raleigh, N. C.	G. W. Paschal	944	2	1	1	400
Kate Bitting Reynolds Memorial Hospital [1-3]	Winston-Salem, N. C.	H. R. Malloy	2,640	16	2	5	315
Bismarck Hospital [3]	Bismarck, N. Dak.	R H. Waldschmidt	926	21	3	3	300
St. Luke's Hospital [3]	Fargo, N. Dak.	V. G. Borland	1,143	5	2	2	300
Deaconess Hospital [1-3]	Cincinnati	R W. Good, S. Hamilton	3,434	17	2	3	250
Elyria Memorial Hospital [1-3]	Elyria, Ohio	R. E. Hayes	1,879	21	1	2	270
Mercy Hospital [1-3]	Hamilton, Ohio	C. U. Hauser	2,599	32	2	6	200
Lima Memorial Hospital [1-3]	Lima, Ohio	R. R. Snowball	4,868	29	1	1	275
Mansfield General Hospital [1-3]	Mansfield, Ohio	P. S. Test	3,531	16	4	4	200
Flower Hospital [1-3]	Toledo, Ohio	W. H. Meffley	4,141	34	1	1	300
Wesley Hospital [1]	Oklahoma City	A. H. Bell	1,314	15	2	2	300
Emanuel Hospital [1-3]	Portland, Ore.	F. H. Bentley	3,413	38	2	4	275
Good Samaritan Hospital [1-3]	Portland, Ore.	F. Short	6,251	72	3	3	275

Numerical and other references will be found on pages 788 through 790.

26. SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Beginning Stipend (Month)
Providence Hospital [1-3]	Portland, Ore.	J. Adams	8,845	87	1	1	275
Altoona Hospital [1-3]	Altoona, Pa.	F. I. Taylor	3,690	40	..	..	325
Bradford Hospital [1-3]	Bradford, Pa.	S. A. McCutcheon	967	3	..	2	250
Hazleton State Hospital [1-3]	Hazleton, Pa.	J. P. H. Kettrick	2,433	10	3	3	353
St. Joseph Hospital	Hazleton, Pa.	....	....	..	..	..	...
Jeanes Hospital [1-3]	Philadelphia	F. A. Bothe	....	..	..	..	200
St. Joseph's Hospital [1-3]	Philadelphia	J. A. Lehman	2,353	83	3	3	300
St. Mary's Hospital [3]	Philadelphia	W. J. Tourish	1,780	15	2	2	300
Woman's Hospital [1-3]	Philadelphia	S. [illegible]	1,322	5	2	2	175
St. Margaret Memorial Hospital [1-3]	Pittsburgh	J. [illegible]	1,782	16	1	1	300
Mercy Hospital [1-3]	Wilkes-Barre, Pa.	L. [illegible]	2,450	10	1	1	250
Wilkes-Barre General Hospital [1-3]	Wilkes-Barre, Pa.	P. [illegible] Morgan	2,615	30	2	2	225
Columbia Hospital [1-3]	Wilkinsburg, Pa.	W. [illegible] Hetzel	3,690	32	2	4	400
Memorial Hospital [1-3]	Chattanooga, Tenn.	F. [illegible]	3,022	11	4	4	300
Newell Hospital [1-3]	Chattanooga, Tenn.	E. [illegible]	2,228	10	3	3	300
St. Mary's Memorial Hospital [3]	Knoxville, Tenn.	C. L. Chumley	3,538	13	1	2	250
Gaston Hospital [1-3]	Dallas, Texas	J. V. Goode	3,046	22	4	4	200
Harris Hospital [1]	Fort Worth, Texas	W. W. McKinney	2,476	16	1	2	300
St. Luke's Episcopal Hospital [1-3]	Houston, Texas	W. D. Seybold	1,876	15	4	4	100
Southern Pacific Hospital [3]	Houston, Texas	J. R. Gandy	369	2	3	3	...
Baptist Memorial Hospital [1-3]	San Antonio, Texas	A. F. Clark, Sr.	6,777	35	1	1	150
Thomas D. Dee Memorial Hospital [1]	Ogden, Utah	G. H. Lowe	3,898	32	2	2	300
Holy Cross Hospital [1-3]	Salt Lake City	E. H. Phillips	4,791	40	1	4	275
St. Mark's Hospital [1]	Salt Lake City	J. A. Clark	1,395	11	..	..	...
Riverside Hospital [1-3]	Newport News, Va.	B. Gillespie	2,824	10	2	2	250
Richmond Memorial Hospital [1-3]	Richmond, Va.	H. J. Warthen, Jr.	2,351	16	3	5	350
St. Elizabeth's Hospital [1-3]	Richmond, Va.	G. W. Horsley	804	4	2	3	200
Lewis Gale Hospital [1-3]	Roanoke, Va.	W. L. Sibley	2,076	13	2	2	350
Doctors Hospital [1-3]	Seattle	J. T. Payne	4,466	20	1	2	250
Providence Hospital [1-3]	Seattle	A. I. Sheridan	6,306	38	3	3	300
Sacred Heart Hospital [1-3]	Spokane, Wash.	C. P. Schlicke	11,557	72	2	2	250
Laird Memorial Hospital [1-3]	Montgomery, W. Va.	W. R. Laird	1,893	3	2	2	300
Mercy Hospital [1-3]	Janesville, Wis.	E. W. Reinardy	1,189	..	4	4	250
La Crosse Lutheran Hospital [1-3]	La Crosse, Wis.	S. B. Gundersen, Sr.	2,591	46	2	2	...
Methodist Hospital [1-3]	Madison, Wis.	A. S. Jackson	5,054	61	2	2	250
St. Joseph's Hospital [1]	Marshfield, Wis.	B. R. Lawton	1,296	9	2	2	350
Evangelical Deaconess Hospital [1-3]	Milwaukee	H. B. Benjamin	1,975	19	4	6	250
St. Luke's Hospital [1-3]	Milwaukee	R. Galasinski	3,974	33	3	3	325

27. THORACIC SURGERY

Residency programs in the following hospitals have been approved by the Council and the Board of Thoracic Surgery, as offering acceptable training in the specialty.

Hospitals, 104; Residencies, 232

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
UNTED STATES ARMY								
Letterman Army Hospital [1-3]	San Francisco	S. W. French, III	334	8	1	2	2	...
Fitzsimons Army Hospital [1-3]	Denver	D. F. Winn	315	4	1	2	2	...
Army Medical Center [1-3]	Washington, D. C.	H. A. Blake	125	6	1	2	2	...
UNITED STATES NAVY								
U. S. Naval Hospital [1]	San Diego, Calif.	J. M. Hanner	454	22	1	2	2	...
U. S. Naval Hospital [1]	St. Albans, N. Y.	J. J. Timmes	.....	3	1	2	2	...
NONFEDERAL AND VETERANS ADMINISTRATION								
University of Alabama Medical Center								
University Hospital and Hillman Clinic [1-3]	Birmingham, Ala.	R. B. Perkins	650	..	..	..	2	...
City of Hope Medical Center	Duarte, Calif.	....	.....	..	..	..	1	...
Veterans Admin. Hospital [1-3-101]	Los Angeles	F. X. Byron	257	31	..	2	2	412
Highland-Alameda County Hospital [1-3-102]	Oakland, Calif.	D. J. Dugan	299	4	2	3	2	200
Harbor General Hospital [1]	Torrance, Calif.	A. J. Beland	124	5	1	2	2	259
National Jewish Hospital [1-3]	Denver	J. B. Grow	547	2	1	2	2	266
Veterans Admin. Hospital [1-3]	Denver	R. K. Brown	73	7	..	1	2	254
Yale-New Haven Medical Center								
Grace-New Haven Community Hospital [1-3]	New Haven, Conn.	G. E. Lindskog	292	8	..	1	2	150
Hospital of St. Raphael [3]	New Haven, Conn.	M. G. Carter	252	11	1	2	2	225
Cedarcrest Hospital [1-3]	Newington, Conn.	R. L. Kemler	142	1	1	1	1	350
Uncas-On-Thames Hospital [1-3]	Norwich, Conn.	W. O. Kelley	394	6	2	2	1	350
George Washington University Hospital [1-3]	Washington, D. C.	B. Blades	352	9	1	2	2	150
Medical College of Georgia Hospitals		....	.....	..	..	..	2	...
Eugene Talmadge Memorial Hospital [1-3]	Augusta, Ga.	R. G. Ellison	241	14	..	4	2	250
Battey State Hospital	Rome, Ga.	....	.....	..	..	..	..	...
Grady Memorial Hospital [1]	Atlanta, Ga.	....	.....	..	..	..	1	...
Emory University Hospital [1-3]	Emory University, Ga.	O. A. Abbott	831	18	..	4	2	255
Leahi Hospital [1-3]	Honolulu, Hawaii	P. W. Gebauer	.....	1	1	1	1	400
Chicago State Tuberculosis Sanitarium [1-3]	Chicago	H. T. Langston	371	3	2	2	1	300
Children's Memorial Hospital [1-3]	Chicago	W. J. Potts	Incl. in Surgery		..	1	1	75
City of Chicago Municipal Tuberculosis Sanitarium [1-3]	Chicago	W. M. Lees	715	9	..	9	1	185
Northwestern University Medical Center		....	.....	..	..	..	..	...
Veterans Admin. Research Hospital [1-3]	Chicago	F. W. Preston	192	12	..	2	2	271
Veterans Admin. Hospital [1-3-104]	Hines, Ill.	H. T. Langston	313	25	..	3	2	462
Suburban-Cook County Tuberculosis Hospital [1-3]	Hinsdale, Ill.	A. F. Reimann	342	7	1	1	1	450
State University of Iowa Hospitals [1-3]	Iowa City	J. H. Ehrenhaft	580	30	..	2	2	415
University of Kansas Medical Center [1-3]	Kansas City, Kan.	F. Allbritten	Incl. in Surgery		..	1	1	125
Charity Hospital of Louisiana								
Louisiana State University Unit [1]	New Orleans	L. H. Strug	175	10	1	2	2	175
Tulane University Unit [1]	New Orleans	O. Creech	132	13	1	2	2	175

Numerical and other references will be found on pages 788 through 790.

27. THORACIC SURGERY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [8]	Total Residencies Offered [8]	Length of Approved Program (Years)	Beginning Stipend (Month)
Confederate Memorial Medical Center [1]	Shreveport, La.	...	...	..	..	..	2	...
University Hospital [1]	Baltimore	...	...	..	..	..	2	...
Veterans Admin. Hospital [1-3]	Baltimore	R. F. Kieffer	180	3	..	..	1	271
Boston City Hospital [1]	Boston	J. W. Strieder	387	21	..	2	2	182
Boston Sanatorium [1-3]	Boston	...	...	..	..	..	1	...
New England Deaconess Hospital [1-3]	Boston	R. Overholt	571	12	2	4	2	200
University Hospital [1-3]	Ann Arbor, Mich.	C. Haight	640	19	2	6	2	195
Henry Ford Hospital [1-3]	Detroit	C. R. Lam	147	59	3	5	2	265
Herman Kiefer Hospital [1-3]	Detroit	W. M. Tuttle	586	5	4	7	2	554
Ingham Chest Hospital	Lansing, Mich.	C. J. Stringer	667	33	1	2	2	300
Veterans Admin. Hospital [1-3]	Minneapolis	D. J. Ferguson	205	..	..	1	2	271
Mayo Foundation [1]	Rochester, Minn.	O. T. Clagett	Incl. in Surgery		3	6	2	175
University Hospital [1-3]	Jackson, Miss.	J. D. Hardy	52	6	..	2	2	325
Mississippi State Sanatorium [1-3]	Sanatorium, Miss.	W. R. Webb	231	3	..	..	1	...
Missouri State Sanatorium [1-3]	Mount Vernon, Mo.	J. W. Polk	Incl. in Pul. Dis.		2	3	1	400
Barnes Hospital [1-3]	St. Louis	T. H. Burford	776	36	2	8	2	250
B. S. Pollak Hospital for Chest Diseases [1-3]	Jersey City, N. J.	F. Bortone	197	..	2	2	2	167
Albany Hospital [1-3]	Albany, N. Y.	A. Stranahan	754	24	1	2	2	160
Kings County Hospital [1-3]	Brooklyn, N. Y.	Karl E. Karlson	394	21	2	4	2	195
Veterans Admin. Hospital [1-3]	Brooklyn, N. Y.	R. Klopstock	503	5	1	2	2	412
Maimonides Hospital [1-3]	Brooklyn, N. Y.	...	...	..	..	..	1	...
Buffalo General Hospital [1-3]	Buffalo	J. R. Paine	130	7	2	4	2	175
Edward J. Meyer Memorial Hospital [1-3]	Buffalo	J. D. Stewart	134	11	..	..	2	247
Veterans Admin. Hospital [1-3]	Buffalo	W. M. Chardack	222	2	1	2	2	412
Veterans Admin. Hospital [1-3]	Castle Point, N. Y.	R. Douglass	130	1	..	2	1	...
Triboro Hospital [1-3]	Jamaica, N. Y.	L. Miscall	146	13	3	5	2	175
Mount Morris Tuberculosis Hospital [1-3]	Mount Morris, N. Y.	J. M. Judd	174	4	2	2	1	594
Bellevue Hospital Center								
Div. I—Columbia University [1-3-302]	New York City	R. H. Wylie	Incl. in Pul. Dis.		2	4	2	195
Bronx Municipal Hospital Center [1-3]	New York City	C. B. Ripstein	55	8	2	4	2	195
Montefiore Hospital [1-3]	New York City	A. H. Aufses	172	2	..	1	1	187
New York Medical College—Metropolitan Medical Center								
Metropolitan Hospital [1-3]	New York City	S. A. Thompson	127	3	1	2	1	195
St. Joseph's Hospital for Chest Diseases [1-3]	New York City	W. W. Fischer	283	3	1	2	1	300
Veterans Admin. Hospital (Bronx) [1-3]	New York City	P. Cooper	182	13	1	2	2	412
Veterans Admin. Hospital (Manhattan) [1-3-298]	New York City	H. Stern	134	8	..	2	2	271
Homer Folks Tuberculosis Hospital [1-3]	Oneonta, N. Y.	A. M. Skinner	126	..	1	1	1	594
Ray Brook State Tuberculosis Hospital [1-3]	Ray Brook, N. Y.	D. V. Pecora	199	3	2	2	1	594
Sea View Hospital [1-3]	*Staten Island, N. Y.*	L. R. *Davidson*	253	7	2	2	1	195
Veterans Admin. Hospital [1-3]	Sunmount, N. Y.	G. J. Digman	220	3	..	2	1	271
North Carolina Memorial Hospital [1-3]	Chapel Hill, N. C.	R. M. Peters	227	9	..	2	1	266
Charlotte Memorial Hospital [1]	Charlotte, N. C.	A. G. Brenizer, Jr.	252	11	1	2	2	295
Duke Hospital [1-3]	Durham, N. C.	W. C. Sealyy	658	17	..	..	2	...
Veterans Admin. Hospital [1-3]	Oteen, N. C.	H. E. Walkup	664	33	..	4	2	463
North Carolina Baptist Hospital [1-3]	Winston-Salem, N. C.	H. Bradshaw	293	20	1	2	2	166
Cleveland Clinic Hospital [1-3]	Cleveland	D. B. Effler	457	22	..	4	2	350
Cleveland Metropolitan General Hospital [1-3]	Cleveland	C. H. A. Clowes, Jr.	106	9	1	2	2	217
Veterans Admin. Hospital [1-3-321]	Cleveland	H. J. Mendelsohn	102	10	1	2	2	271
Benjamin Franklin Hospital-Mount								
Carmel Hospital [1-3]	Columbus, Ohio	M. G. Buckles	283	10	2	4	2	400
Ohio State University Hospitals								
Ohio Tuberculosis Hospital [1-3]	Columbus, Ohio	N. C. Andrews	151	5	..	2	2	277
University Hospitals [1-3]	Columbus, Ohio	K. P. Klassen	589	26	..	2	2	277
University of Oklahoma Medical Center	...	G. S. Campbell	...	..	1	2	..	...
University Hospital [1-3]	Oklahoma City	...	230	10	..	..	2	300
University of Oregon Medical								
School Hospitals and Clinics [1-3]	Portland, Ore.	W. S. Conklin	125	10	2	3	2	125
Episcopal Hospital [1-3]	*Philadelphia*	*R. P. Glover,* T. J. E. O'Neill	101	4	1	2	1	150
Hahnemann Medical College and Hospital [1-3]	Philadelphia	H. T. Nichols	760	52	4	18	2	75
Philadelphia General Hospital [1-3]	Philadelphia	E. Mendelssohn	...	..	..	1	1	250
Presbyterian Hospital [1-3]	Philadelphia	R. P. Glover	458	6	2	2	1	225
Health Center Hospitals of the University of Pittsburgh								
School of Medicine		...	...	..	..	..	3	...
Allegheny General Hospital [1-3]	Pittsburgh	E. M. Kent	792	40	2	4	..	...
Children's Hospital	Pittsburgh	...	...	..	..	..	..	...
Presbyterian Hospital	Pittsburgh	...	...	..	..	..	..	...
Veterans Admin. Hospital [1-3]	Memphis, Tenn.	F. A. Hughes	248	50	2	2	2	271
West Tennessee Tuberculosis Hospital [1-3]	Memphis, Tenn.	F. H. Cole	288	2	2	4	2	350
Vanderbilt University Hospital [1-3]	Nashville, Tenn.	R. Daniel	296	21	..	1	2	50
Baylor University Hospital [3-39]	Dallas, Texas	R. R. Shaw	712	17	..	1	2	215
Veterans Admin. Hospital [1-3]	Dallas, Texas	R. H. Holland	223	30	1	2	2	412
University of Texas Medical								
Branch Hospitals [1-3]	Galveston, Texas	A. W. Harrison	265	5	1	2	2	160
Baylor University Affiliated Hospitals	...	...	...	..	..	..	2	...
Jefferson Davis Hospital [1-3]	Houston, Texas	...	...	..	1	2	..	165
Methodist Hospital [1-3]	Houston, Texas	L. L. D. Tuttle	362	36	..	..	..	...
Veterans Admin. Hospital [1-3]	Houston, Texas	M. E. DeBakey	351	37	1	2	..	270
Dr. W. H. Groves Latter-Day								
Saints Hospital [1-3]	Salt Lake City	W. R. Rumel	461	9	1	1	2	350
University of Virginia Hospital [1-3]	Charlottesville, Va.	E. C. Drash	630	8	1	1	2	75
Veterans Admin. Hospital [1-3-385]	Richmond, Va.	L. H. Bosher, Jr.	208	17	1	2	2	271
Firland Sanitorium [1-3]	Seattle	F. J. Jarvis	156	1	..	1	1	300
Sacred Heart Hospital [3]	Spokane, Wash.	R. Berg, Jr.	...	..	..	..	1	250
Veterans Admin. Hospital [1-3]	Milwaukee (Wood), Wis.	W. Weisel	274	8	..	1	2	412

Numerical and other references will be found on pages 788 through 790.

28. UROLOGY

Residency programs in the following hospitals have been approved by the Council and the American Board of Urology, through the Residency Review Committee for Urology. These programs are approved for THREE years of training. All hospitals listed offer three years of training intramurally or on an integrated basis through affiliation with another approved institution.

Hospitals, 233; Residencies, 740

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered*	Total Residencies Offered*	Beginning Stipend (Month)
UNITED STATES AIR FORCE							
U. S. Air Force Hospital	San Antonio, Texas		...	...	..	..	...
UNITED STATES ARMY							
Letterman Army Hospital [1-3]	San Francisco	E. L. Lewis	536	7	1	3	...
Army Medical Center [1-3]		J. F. Patton	426	13	2	6	...
Tripler Army Hospital [1-3]		C. A. Moore	983	2	1	3	...
Brooke Army Hospital [1-3]	San Antonio, Texas	L. K. Mantell	953	6	2	6	...
UNITED STATES NAVY							
U. S. Naval Hospital [1-3]	Oakland, Calif.	M. S. Curtis	698	4	1	4	...
U. S. Naval Hospital [1]	San Diego, Calif.	J. R. Dillon, Jr.	1,201	10	1	4	...
U. S. Naval Hospital [1-3]	Bethesda, Md.	J. S. Hanten	625	15	1	4	...
U. S. Naval Hospital	St. Albans, N. Y.	J. F. Richardson	559	5	1	4	...
U. S. Naval Hospital [1]	Philadelphia	R. P. Black	559	10	1	4	...
UNITED STATES PUBLIC HEALTH SERVICE							
U. S. Public Health Service Hospital [1-3-256]	Stapleton, S. I., N. Y.	C. D. Miller	1,037	6	1	4	...
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE							
Freedmen's Hospital [1-3]	Washington, D. C.	R. F. Jones	446	5	1	4	308
NONFEDERAL AND VETERANS ADMINISTRATION							
Carraway Methodist Hospital [1]	Birmingham, Ala.	H. Hudson	528	4	..	1	250
University of Alabama Medical Center							
University Hospital and Hillman Clinic [1-3]	Birmingham, Ala.	B. Barclare	308	4	1	2	143
Veterans Admin. Hospital [1-3]	Birmingham, Ala.	F. D. Howard	27	2	1	1	271
University Hospital [1]	Little Rock, Ark.	J. Headstream	506	5	..	3	275
Kern County General Hospital [1-3]	Bakersfield, Calif.	J. Dykes, S. G. Kearney	207	5	1	2	350
Veterans Admin. Hospital [1-3]	Long Beach, Calif.	A. J. Bischoff	548	23	1	3	271
Kaiser Foundation Hospital [1-3]	Los Angeles	J. F. Cooper	1,126	2	1	2	250
Los Angeles County Hospital [1]	Los Angeles	R. Barnes	2,643	65	2	8	259
University of California Medical Center							
University Hospital [1-3]	Los Angeles	W. E. Goodwin	582	11	1	4	229
Veterans Admin. Hospital [1-3]	Los Angeles	W. E. Goodwin	1,142	42	2	7	293
Harbor General Hospital [1]	Torrance, Calif.	M. Ellik	469	22	1	4	259
College of Medical Evangelists Affiliated Hospitals							
White Memorial Hospital [1-3-80]	Los Angeles	R. T. Bergman	467	4	1	3	215
Highland-Alameda County Hospital [1-3]	Oakland, Calif.	H. J. Kay	427	8	1	3	200
San Diego County General Hospital [1]	San Diego, Calif.	S. G. Peck	325	10	1	3	250
San Francisco-Stanford Hospital	San Francisco	H. Weyrauch	.....	..	1	2	...
Southern Pacific General Hospital [1-3]	San Francisco	T. E. Gibson	411	3	1	2	175
University of California Hospitals							
San Francisco Hospital (University of California Service) [109]	San Francisco		.....	..	..	..	...
University of California Hospital [1]	San Francisco	D. R. Smith	537	10	2	6	231
Santa Clara County Hospital [1-3]	San Jose, Calif.	L. J. Pingree	256	11	..	1	260
Veterans Admin. Hospital [1-3-111]	San Francisco	D. R. Smith	331	3	1	3	271
University of Colorado Medical Center							
Colorado General Hospital [1-3]	Denver	D. E. Newland	310	5	1	3	180
Denver General Hospital [1-3]	Denver	D. E. Newland	349	3	..	..	179
Veterans Admin. Hospital [1-3]	Denver	O. G. Stonington	445	14	1	1	254
Yale-New Haven Medical Center							
Grace-New Haven Community Hospital [1-3]	New Haven, Conn.	B. M. Harvard	1,065	5	..	3	50
Veterans Admin. Hospital [1-3]	West Haven, Conn.	J. Walsh	Incl. in Surg.		..	1	254
Waterbury Hospital [1-3]	Waterbury, Conn.	C. H. Neuswanger	613	11	1	3	225
Delaware Hospital [1-3]	Wilmington, Del.	J. H. Furlong	403	5	1	3	220
District of Columbia General Hospital [1-3]	Washington, D. C.	R. Baker, L. Culbertson	338	8	2	4	233
Veterans Admin. Hospital-Georgetown University Hospital [1-3-181]	Washington, D. C.	J. G. Lee, R. Baker	298	16	1	3	270
Duval Medical Center-St. Vincent's Hospital [1-3]	Jacksonville, Fla.	W. A. Van Nortwick	1,059	8	1	3	225-325
Jackson Memorial Hospital [1-3]	Miami, Fla.	G. R. Prout	963	14	3	7	225
Orange Memorial Hospital [1]	Orlando, Fla.	F. J. Pyle	1,336	18	1	3	325
Grady Memorial Hospital [3]	Atlanta, Ga.	M. K. Bailey	578	12	2	6	125
St. Joseph's Infirmary [1-3-322]	Atlanta, Ga.	H. P. McDonald	1,049	10	1	3	270
Veterans Admin. Hospital [1-144]	Atlanta, Ga.	E. Haltiwanger	291	8	1	3	271
Medical College of Georgia Hospitals							
Eugene Talmadge Memorial Hospital [1-3]	Augusta, Ga.	R. J. Rinker	327	11	1	4	250
University Hospital [1-3]	Augusta, Ga.	W. Lucas	716	5	1	1	200
Memorial Hospital of Chatham County [1-3]	Savannah, Ga.	C. L. Prince	514	5	1	3	350
Cook County Hospital [1-3]	Chicago	J. L. Wilkey	802	6	1	6	140
Mercy Hospital [1-3]	Chicago	H. E. Landes	816	8	1	2	225
Michael Reese Hospital [1-3]	Chicago	I. J Shapiro	741	19	1	3	125
Mount Sinai Hospital [1-3]	Chicago	L. A. Maslow	407	2	1	3	225
Northwestern University Medical Center							
Chicago Wesley Memorial Hospital [1-3]	Chicago	V. J. O'Conor	729	9	1	2	125
Passavant Hospital [1-3]	Chicago		.....	..	..	..	...
Veterans Admin. Research Hospital [1-3]	Chicago	V. J. O'Conor	452	17	1	2	271
Presbyterian—St. Luke's Hospital [1-3-411]	Chicago	E. C. Graf	578	6	1	3	125
University of Chicago Clinics [1-3]	Chicago	C. W. Vermeulen	485	11	1	4	200
University of Illinois Research and Educational Hospitals [1-3]	Chicago	J. H. Kiefer	347	6	..	1	145
Veterans Admin. Hospital [1-3-165]	Hines, Ill.	F. Lloyd	908	20	3	12	270

Numerical and other references will be found on pages 788 through 790.

28. UROLOGY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered ^{8}	Total Residencies Offered ^{8}	Beginning Stipend (Month)
Indiana University Medical Center							
Indiana University Medical Center Hospital ^{1}	Indianapolis	R. A. Garrett	325	6	2	8	225
Marion County General Hospital $^{1-3}$	Indianapolis	R. D. Howell	370	14	1	4	210
Methodist Hospital ^{1}	Indianapolis	M. H. Nourse	2,225	8	1	2	278
Veterans Admin. Hospital $^{1-3}$	Indianapolis	R. A. Garrett	624	177	..	..	271
Veterans Admin. Hospital $^{1-3-47}$	Des Moines, Iowa	L. J. Arduino	1,054	21	1	3	271
State University of Iowa Hospitals $^{1-3}$	Iowa City	R. H. Flocks	1,963	48	3	9	175
University of Kansas Medical Center $^{1-3}$	Kansas City, Kan.	W. L. Valk	838	15	2	6	125
Veterans Admin. Hospital $^{1-3}$	Kansas City, Mo.	W. L. Valk	229	6	..	..	271
Good Samaritan Hospital-St. Joseph Hospital $^{1-3}$	Lexington, Ky.	E. H. Ray	720	5	1	3	230
University of Louisville Medical Center							
Louisville General Hospital $^{1-3}$	Louisville, Ky.	R. Lich, Jr.	239	6	..	3	105
Veterans Admin. Hospital $^{1-3}$	Louisville, Ky.	H. I. Berman	276	8	..	1	270
Charity Hospital of Louisiana							
Independent Unit ^{1}	New Orleans	H. L. Zengel	448	5	1	3	100
Louisiana State University Unit ^{1}	New Orleans	H. T. Beacham	865	21	2	6	100
Tulane University Unit ^{1}	New Orleans	E. Burns	1,178	13	2	6	100
Ochsner Foundation Hospital $^{1-3-179}$	New Orleans	E. Burns	817	4	1	3	225
Veterans Admin. Hospital $^{1-3-10}$	New Orleans	E. Burns	431	15	1	3	271
Touro Infirmary $^{1-10}$	New Orleans	G. Tomskey	904	11	1	1	125
Confederate Memorial Medical Center $^{1-3}$	Shreveport, La.	R. K. Womack	1,110	11	1	4	125
Johns Hopkins Hospital $^{1-3}$	Baltimore	W. W. Scott	957	15	4	7	25
Sinai Hospital $^{1-3-49}$	Baltimore	B. S. Abeshouse	623	9	2	5	110
Fordham Hospital $^{1-3-49}$	New York City		.....	..	..	..	...
University Hospital $^{1-3}$	Baltimore		.....	..	..	..	...
Veterans Admin. Hospital $^{1-3-186}$	Fort Howard, Md.		162	6	1	1	271
Beth Israel Hospital $^{1-3-51}$	Boston		407	..	..	2	167
Lawrence F. Quigley Memorial Hospital ^{51}	Chelsea, Mass.		.....	..	..	..	...
Boston City Hospital ^{1}	Boston	✓G. Austen, Jr.	573	4	2	5	182
Massachusetts General Hospital $^{1-3}$	Boston	✓W. F. Leadbetter	1,661	..	..	..	67
Massachusetts Memorial Hospitals $^{1-3-55}$	Boston	D. Stearns	426	3	1	1	175
Lynn Hospital ^{55}	Lynn, Mass.		.....	..	..	..	...
New England Center Hospital $^{1-3}$	Boston	B. G. Clarke	239	..	1	3	100
Peter Bent Brigham Hospital $^{1-3-11}$	Boston	J. H. Harrison	Incl. in Surg.		..	3	62
Veterans Admin. Hospital $^{1-3}$	West Roxbury, Mass.	H. S. Talbot	214	10	1	3	270
Veterans Admin. Hospital $^{1-3-11-208}$	Boston (Jamaica Plain)	R. Chute	788	10	1	3	292
University Hospital $^{1-3-215}$	Ann Arbor, Mich.	✓R. M. Nesbit	1,314	20	2	6	195
Grace Hospital $^{1-3}$	Detroit	M. N. Stewart	1,095	4	1	3	275
Harper Hospital $^{1-3}$	Detroit	F. B. Bicknell	1,346	16	1	3	300
Henry Ford Hospital $^{1-3}$	Detroit	A. W. Bohne	979	9	2	6	265
Receiving Hospital $^{1-3}$	Detroit	D. Jaffar	684	13	2	6	303
Wayne County General Hospital and Infirmary $^{1-3}$	Eloise, Mich.	J. Lapides	446	16	..	3	385
Minneapolis General Hospital—St. Mary's Hospital $^{1-3}$	Minneapolis	T. H. Sweetser, Sr.	1,318	19	1	5	220
University of Minnesota Hospitals $^{1-3-231}$	Minneapolis	C. D. Creevy	827	18	1	4	244
Veterans Admin. Hospital $^{1-3}$	Minneapolis	C. D. Creevy	724	18	3	8	271
Mayo Foundation ^{1}	Rochester, Minn.	G. J. Thompson	3060	11	5	20	175
Ancker Hospital $^{1-3-56}$	St. Paul	F. E. B. Foley	262	6	1	3	220
Charles T. Miller Hospital $^{1-3-56}$	St. Paul	B. J. McGroarty	633	1	..	1	325
University of Mississippi Medical Center							
University Hospital $^{1-3}$	Jackson, Miss.	T. [illegible]	256	...	1	3	250
Veterans Admin. Hospital $^{1-3}$	Jackson, Miss.	S. [illegible]	307	...	..	..	271
Kansas City General Hospital $^{1-3}$	Kansas City, Mo.	A. [illegible]	452	4	1	4	220
Barnes Hospital $^{1-3-244}$	St. Louis	✓J. J. Cordonnier	1,145	9	2	6	50
Homer G. Phillips Hospital $^{1-3}$	St. Louis	M. Abrams	337	16	..	4	285
Missouri Pacific Hospital ^{3}	St. Louis	A. E. Vitt	492	2	..	1	200
St. Louis City Hospital $^{1-3}$	St. Louis	C. [illegible]	356	5	1	4	234
St. Mary's Group of Hospitals $^{1-3}$	St. Louis	C. [illegible]	667	6	1	3	100
Veterans Admin. Hospital $^{1-3}$	St. Louis	J. [illegible]	364	7	1	3	271
Dartmouth Medical School Affiliated Hospitals		W. L. McLaughlin	685	11	1	..	218
Mary Hitchcock Memorial Hospital $^{1-3}$	Hanover, N. H.		.....	..	..	..	...
Veterans Admin. Hospital $^{1-3}$	White River Jct., Vt.		.....	..	..	..	...
Bayonne Hospital and Dispensary $^{3-50}$	Bayonne, N. J.	A. J. Balsamo	1,813	8	1	3	175
Jersey City Medical Center $^{1-3-50}$	Jersey City, N. J.	E. J. Daly	782	19	1	3	146
Veterans Admin. Hospital $^{1-3-252}$	East Orange, N. J.	M. Malament	511	18	1	3	270
Hackensack Hospital $^{1-3-12}$	Hackensack, N. J.	F. P. Twinem	559	8	1	1	150
Harrison S. Martland Medical Center $^{1-3}$	Newark, N. J.	E. Seidman	368	6	1	3	160
Albany Hospital $^{1-3}$	Albany, N. Y.	W. A. Milner	890	6	1	3	160
Jewish Hospital $^{1-3}$	Brooklyn, N. Y.	A. D. Segal, P. Katzen	762	4	1	2	100
Kings County Hospital Center $^{1-3-265}$	Brooklyn, N. Y.	F. C. Hamm	1,164	23	2	6	145
Brooklyn Hospital $^{1-3-81}$	Brooklyn, N. Y.		.....	..	..	..	...
Long Island College Hospital $^{1-3}$	Brooklyn, N. Y.	H. C. Harlin	735	2	1	2	156
Maimonides Hospital $^{1-3}$	Brooklyn, N. Y.	H. Hermann	1,208	6	1	3	75
Veterans Admin. Hospital $^{1-3}$	Brooklyn, N. Y.	F. L. Senger	390	20	1	3	292
Buffalo General Hospital $^{1-3}$	Buffalo	O. J. Oberkircher	1,055	6	1	2	175
Roswell Park Memorial Hospital $^{1-3}$	Buffalo		.....	..	..	..	...
Edward J. Meyer Memorial Hospital $^{1-3-271}$	Buffalo	E. L. Brodie	364	10	1	4	247
Millard Fillmore Hospital $^{1-3}$	Buffalo	P. A. Greco	816	3	..	3	285
City Hospital at Elmhurst $^{1-3}$	Elmhurst, N. Y.	W. L. F. Ferber	273	8	1	3	145
Meadowbrook Hospital $^{1-3}$	Hempstead, N. Y.	R. M. Bowles	666	26	1	4	225
Bellevue Hospital Center							
Div. II—Cornell University $^{1-3-298}$	New York City	J. Draper	360	..	1	4	145
Div. IV—New York University Post-Graduate Medical School $^{1-3-305}$	New York City	R. S. Hotchkiss	349	..	3	7	145
Beth Israel Hospital $^{1-3}$	New York City	L. A. Orkin	883	5	1	3	160
Bronx Municipal Hospital Center $^{1-3}$	New York City	H. R. Newman	515	15	2	6	145
Francis Delafield Hospital $^{1-3}$	New York City	J. K. Lattimer	362	14	2	5	145
French Hospital $^{1-3}$	New York City	J. D. Cooney	546	11	1	3	110
Lincoln Hospital $^{1-3-12}$	New York City	F. P. Twinem	134	6	1	2	145
Morrisania City Hospital $^{1-3-412}$	New York City	H. Kenyon	496	15	2	4	145
Mount Sinai Hospital $^{1-3}$	New York City	✓G. D. Oppenheimer	1,065	5	4	6	75
New York Hospital $^{1-3}$	New York City	✓V. Marshall	1,642	...	2	6	185
New York Medical College—Metropolitan Center Metropolitan Hospital $^{1-3}$	New York City	G. R. Nagamatsu	488	8	1	3	145
New York Polyclinic Medical School and Hospital $^{1-3}$	New York City	F. A. Beneventi	783	2	1	4	125

Numerical and other references will be found on pages 788 through 790.

28. UROLOGY—Continued

Name of Hospital	Location	Chief of Service	Inpatients Treated	Autopsies	First Year Residencies Offered [9]	Total Residencies Offered [9]	Beginning Stipend (Month)
Presbyterian Hospital [1]	New York City	J. K. Lattimer	2,429	8	4	8	266
Roosevelt Hospital [3]	New York City	S. A. Beisler	591	8	1	3	166
St. Clare's Hospital [1-3]	New York City	G. A. Fiedler	261	2	1	3	200
St. Luke's Hospital [1-3]	New York City	J. A. Taylor	681	8	1	3	100
Veterans Admin. Hospital (Bronx) [1-208]	New York City	A. L. Dean	971	23	2	5	271
Veterans Admin. Hospital (Manhattan) [1-3-283]	New York City	A. H. Ulm	466	27	..	5	271
Strong Memorial—Rochester Municipal Hospital [1-3]	Rochester, N. Y.	D. P. McDonald	706	..	1	3	117
State University of New York							
Upstate Medical Center [1-3]	Syracuse, N. Y.	F. O. Harbach	970	12	..	3	233
Veterans Admin. Hospital [1-3]	Syracuse, N. Y.	W. L. Parry	324	12	1	1	236
North Carolina Memorial Hospital [1-3]	Chapel Hill, N. C.	P. L. Bunce	383	1	..	1	266
Charlotte Memorial Hospital [1]	Charlotte, N. C.	H. W. McKay	1,469	7	1	4	295
Duke University Affiliated Hospitals							
Duke Hospital [1-3]	Durham, N. C.	E. B. Alyea	710	9	2	6	127
Veterans Admin. Hospital [1-3]	Durham, N. C.	E. P. Alyea	362	5	1	3	270
Watts Hospital [1-3-20]	Durham, N. C.	L. C. Roberts	.....	...	1	2	300
North Carolina Baptist Hospital [1-3]	Winston-Salem, N. C.	F. Garvey	1,091	6	1	4	166
Akron City Hospital [1-3]	Akron, Ohio	E. W. Caulfield	1,075	...	1	3	250
University of Cincinnati College of Medicine Hospital Group							
Cincinnati General Hospital [1-3]	Cincinnati	T. B. Wayman	496	15	3	9	75
Veterans Admin. Hospital [1-3]	Cincinnati	G. Mellinger	304	9	..	..	271
Cleveland Clinic Hospital [1-3]	Cleveland	C. C. Higgins	1,423	32	2	6	250
Cleveland Metropolitan General Hospital [1-3]	Cleveland	H. R. Trattner	215	6	1	3	188
Huron Road Hospital [1-3]	Cleveland	V. C. Laughlin	647	8	..	2	210
University Hospitals of Cleveland [1-3]	Cleveland	L. Persky	1,018	5	1	5	125
Veterans Admin. Hospital [1-3-331]	Cleveland	L. Persky	467	9	1	3	271
Ohio State University Hospitals							
University Hospital [1-3]	Columbus, Ohio	W. N. Taylor	776	11	..	5	262
Veterans Admin. Hospital [1-3]	Dayton, Ohio	E. F. Kelly	230	17	1	3	271
St. Vincents Hospital [1-3-14]	Toledo, Ohio	E. A. Ockuly	1,027	7	1	4	325
Maumee Valley Hospital [14]	Toledo, Ohio	.....	.....	...	..	..	...
University of Oklahoma Medical Center		D W. Branham	.....	...	1	3	...
University Hospital [1-3]	Oklahoma City	.....	284	4	..	..	200
Veterans Admin. Hospital [1]	Oklahoma City	.....	558	...	..	..	271
University of Oregon Medical School							
Hospitals and Clinics [1-3]	Portland, Ore.	C. V. Hodges	1,335	34	2	5	125
Veterans Admin. Hospital [1-3]	Portland, Ore.	C. A. MacFarlane	527	6	..	1	270
Hamot Hospital [1-3]	Erie, Pa.	R. C. Lyons	594	8	1	2	250
St. Vincents Hospital [1-3]	Erie, Pa.	A. F. Kaminsky	1,029	16	1	3	275
Harrisburg Hospital [1-3]	Harrisburg, Pa.	R. E. Allyn	671	12	1	2	250
Albert Einstein Medical Center [1-3]	Philadelphia	M. Muschat	1,179	16	1	3	125
Episcopal Hospital [1-3]	Philadelphia	G. D. Shoup	396	5	1	2	150
Graduate Hospital of the University of Pennsylvania [1-3-15]	Philadelphia	H. M. Burros	183	1	1	1	100
Mercy Hospital [1-3-15]	Wilkes-Barre, Pa.	F. P. Judge, C. N. Burns	321	4	..	1	250
Hahnemann Medical College and Hospital [1-3]	Philadelphia	E. W. Campbell	809	..	2	6	75
Hospital of the University of Pennsylvania [1-3]	Philadelphia	B. Hughes	1,016	3	1	3	125
Jefferson Medical College Hospital [1-3]	Philadelphia	T. R. Fetter	1,123	6	1	5	100
Pennsylvania Hospital [1-3]	Philadelphia	L. B. Greene	576	5	1	2	20
Philadelphia General Hospital [1-3]	Philadelphia	J. McCrea	386	20	2	5	121
Temple University Hospital [1-3]	Philadelphia	K. B. Conger	832	9	1	3	...
Veterans Admin. Hospital [1-3]	Philadelphia	O. Serlin	334	3	..	3	270
Allegheny General Hospital [1-3]	Pittsburgh	J. L. Hamilton	875	10	1	1	200
Mercy Hospital [1-3]	Pittsburgh	C. C. Altmân	658	7	1	1	235
Health Center Hospitals of the University of Pittsburgh School of Medicine [1-3]	Pittsburgh	J. J. Lee	519	11	..	3	125
Veterans Admin. Hospital [1-3]	Pittsburgh	C. A. Kuehn	420	16	..	3	271
Robert Packer Hospital [1-3]	Sayre, Pa.	W. Baurys	753	12	1	1	225
Wilkes-Barre General	Wilkes-Barre, Pa.	W. J. Daw	786	9	2	2	225
San Juan City Hospital	San Juan, P. R.	L. A. Sanjurjo	266	..	1	2	250
Rhode Island Hospital [1-3]	Providence, R. I.	E. K. Landsteiner	736	13	1	2	125
Teaching Hospitals of the Medical College of South Carolina [1]	Charleston, S. C.	P. W. Sanders, Jr.	814	3	1	3	137
Medical College Hospital		.....	...	..	..	..	...
Roper Hospital		.....	...	..	..	..	...
Orangeburg Regional Hospital	Orangeburg, S. C.	L. P. Thackston	1,527	5	1	2	200
City of Memphis Hospitals [1-3-16]	Memphis	S. L. Raines	743	16	3	6	150
Baptist Memorial Hospital [1-3-16-46]	Memphis	R. Mayer	1,589	5	..	..	325
Veterans Admin. Hospital [1-3]	Memphis	W. H. Walker	655	22	1	3	271
George W. Hubbard Hospital [1-3]	Nashville, Tenn	D. V. Bradley	.....	...	..	..	...
Vanderbilt University Hospital [1-3]	Nashville, Tenn.	A. P. Harris	323	3	1	1	50
Parkland Memorial Hospital [1-3]	Dallas, Texas	H. Spence	422	4	..	4	150
Veterans Admin. Hospital [1-3-374]	Dallas, Texas	P. A. Duff	562	16	..	2	293
University of Texas Medical Branch Hospitals [1-3]	Galveston, Texas	C. Hooks	641	4	1	3	160
Baylor University College of Medicine Affiliated Hospitals [413]							
Jefferson Davis Hospital [1-3]	Houston, Texas	A. Leader	381	10	1	3	83
Methodist Hospital [1-3]	Houston, Texas	M. K. O'Heeron	140	..	..	..	220
St. Luke's Episcopal Hospital [1-3]	Houston, Texas	T. H. Guthrie	2,278	7	3	3	100
Texas Children's Hospital	Houston, Texas	.....	.....	...	..	..	...
Veterans Admin. Hospital [1-3]	Houston, Texas	A. J. Leader	635	24	2	6	270
Hermann Hospital [1-3-377]	Houston, Texas	C. M. Crigler	1,804	8	1	4	125
University of Vermont Medical School Affiliated Hospitals							
De Goesbriand Memorial Hospital [1-3]	Burlington, Vt.	P. Powell	257	..	1	4	200
Mary Fletcher Hospital [1-3]	Burlington, Vt.	P. Powell	421	4	1	4	100
University of Virginia Hospital [1-3]	Charlottesville, Va.	H. Warren	539	4	1	4	75
Memorial Hospital [1-3]	Danville, Va.	R. R. Landes	876	137	1	1	...
Medical College of Virginia—Hospital Division [1-3]	Richmond, Va.	A. I. Dodson	783	11	1	3	100
Veterans Admin. Hospital [1-3]	Richmond, Va.	R. C. Bunts	713	15	1	4	271
University of Washington Affiliated Hospitals							
King County Hospital Unit No. 1 (Harborview) [1-3-17]	Seattle	J. Kennelly	455	19	1	3	200
University Hospital [1-3]	Seattle	.....	.....	...	..	..	...
Veterans Admin. Hospital [1-3-17]	Seattle	J. M. Kennelly, Jr.	191	5	..	..	271
Madison General Hospital [1-3]	Madison, Wis.	P. R. Kundert	985	3	1	3	175
University Hospitals [1-3-300]	Madison, Wis.	J. B Wear	507	10	1	4	100
Milwaukee County Hospital [1-3]	Milwaukee, Wis.	R. S. Irwin	417	13	..	2	216
Veterans Admin. Hospital [1-3]	Milwaukee (Wood), Wis.	R. S. Irwin	789	19	2	2	271

Numerical and other references will be found on pages 788 through 790.

NUMERICAL AND OTHER REFERENCES

1. Appointments available to women applicants.
2. Appointments available to women applicants only.
3. Appointments available to graduates of foreign medical schools.
4. Training at the third year level only.
5. May include one year fellowships in the Department of Cardiology.
6. May include one year of training at Cook County Hospital, Chicago, by special arrangement.
7. May include one year of surgical research at Louisiana State University School of Medicine.
8. Includes fellowships.
9. In addition to three intramural years at White Memorial Hospital, coordinated three year program: White Memorial Hospital affords two years, Presbyterian Hospital-Olmstead Memorial Hospital one year. Residents should apply to White Memorial Hospital.
10. In addition to three intramural years at Veterans Administration Hospital, coordinated three year program: Touro Infirmary affords one year, Veterans Administration Hospital final two years. Residents should apply to Veterans Administration Hospital.
11. Coordinated three year program: Peter Bent Brigham Hospital affords 18 months. Veterans Administration Hospital, West Roxbury, Mass., 18 months. Residents should apply to either hospital.
12. In addition to three intramural years at Lincoln Hospital, coordinated three year program: Lincoln Hospital affords two years, Hackensack Hospital one year. Residents should apply to Lincoln Hospital.
13. Approved Category I. Residents interested should consult J. A. M. A., Vol. 171, No. 6, pp. 824-828, Oct. 10, 1959.
14. Coordinated three year program: St. Vincent Hospital affords two years, Maumee Valley Hospital, one year. Residents should apply to St. Vincent's Hospital.
15. In addition to three intramural years at Graduate Hospital of the University of Pennsylvania, coordinated three year program: Graduate Hospital affords two years, final year at Mercy Hospital. Residents should apply to Graduate Hospital.
16. In addition to three intramural years at City of Memphis Hospitals, coordinated three year program: City of Memphis Hospitals affords two years, Baptist Memorial Hospital one year. Residents should apply to City of Memphis Hospitals.
17. In addition to three intramural years at King County Hospital, Unit No. 1 (Harborview); coordinated three year program. King County Hospital affords two years, final year at Veterans Admin. Hospital, Seattle. Residents should apply to King County Hospital.
18. Training limited to Contagious Diseases.
19. In addition to three years in Internal Medicine, one year of training in Hematology is available.
20. Co-ordinated three year program. Watts Hospital affords two years, North Carolina Memorial Hospital affords one year; residents should apply to Watts Hospital.
21. Combined integrated program—Bellevue Div. II (Cornell and Memorial Cancer Center.)
22. Training in pediatric psychiatry (third year level).
23. To include one year of affiliate training at the second year level at the University Hospitals (Lakeside) Cleveland.
24. This one year of training is equivalent to one year of basic science as a part of an approved three year program.
25. One year of clinical investigation available.
26. An additional one year of fellowship training in cardio-pulmonary laboratory is available.
27. Includes one year of training at Veterans Administration Hospital, Iowa City.
28. Provides training at the third year level, affiliate training with University of Minnesota Hospitals, Minneapolis.
29. Approved for affiliate training only.
30. Obstetrical and Gynecological pathology only.
31. Co-ordinated three year program; two years at Kings County Hospital. One year at Brooklyn Hospital; residents should apply to King's County Hospital.
32. Approved Category P. Residents interested should consult J. A. M. A., Vol. 171, No. 6, pp. 824-828, Oct. 10, 1959.
33. LaRabida Sanitarium, Lewis Memorial Maternity Hospital, Municipal Contagious Disease Hospital, St. Joseph Hospital, St. Vincent's Hospital, Chicago.
34. Methodist Hospital and St. Francis Hospital Divisions.
35. Affiliate rotation at Yale-New Haven Medical Center, Grace-New Haven Community Hospital.
36. Six months of training is afforded at University Hospitals, Iowa City.
37. Offer training at the third year level only.
38. In addition to the three year program at Bellevue Medical Center, Division I, another program has been approved for two years of training which includes rotation on the following services:
    Columbia University Division and Medical Chest Service, Bellevue Hospital.
    Columbia Research Division, Goldwater Memorial Hospital, Medical Service, Francis Delafield Hospital.
39. Includes one year of training at Parkland Memorial Hospital, Dallas, Texas.
40. Approved for training at the first year level.
41. Previous internship not required.
43. Approved Category H. Residents interested should consult J. A. M. A., Vol. 171, No. 6, pp. 824-828, Oct. 10, 1959.
44. Approved Category J. Residents interested should consult J. A. M. A., Vol. 171, No. 6, pp. 824-828, Oct. 10, 1959.
45. Includes one year fellowship in the cardiopulmonary laboratory.
46. Provides one year of training at third year level as part of three-year program at City of Memphis Hospitals.
47. Includes one year of training at State University of Iowa Hospitals, Iowa City.
48. One year of approved resident training in Pulmonary Diseases is offered at each the University of Kansas Medical Center, Kansas City, Kan., and the Veterans Admin. Hospital, Kansas City, Mo.
49. In addition to three intramural years at Sinai Hospital, Baltimore, coordinated three-year program: Sinai Hospital affords first two years, Fordham Hospital one year (third yr.). Residents should apply to Sinai Hospital.
50. Coordinated three-year program: Bayonne Hospital and Dispensary affords two years: Jersey City Medical Center, Jersey City, one year. Residents should apply to Bayonne Hospital and Dispensary.
51. Co-ordinated three year program; Beth Israel Hospital affords two years, Lawrence F. Quigley Memorial Hospital affords one year. Residents should apply to Beth Israel Hospital.
52. Joint Program—West Jersey Hospital, Cooper Hospital, Our Lady of Lourdes Hospital, Camden, N. J.
53. A second year of training available at Massachusetts General Hospital.
54. In addition to a three year intramural residency, a rotating residency which provides six months training on each of the following services: Columbia University Division, Bellevue Hospital; Medical Chest Service, Bellevue Hospital; Columbia Research Division, Goldwater Memorial Hospital, and Medical Service, Francis Delafield Hospital, is afforded.
55. Co-ordinated three year program; Massachusetts Memorial Hospital affords two years, Lynn Hospital affords one year (second year). Residents should apply to Massachusetts Memorial Hospital.
56. Combined three year program; Two years afforded at Ancker Hospital, one year afforded at Charles T. Miller Hospital. Residents should apply to Ancker Hospital.
76. Medical College of Alabama Hospitals, Birmingham, Ala.
77. University of Arkansas Med. Center, Little Rock, Ark.
78. Sutter [illegible]
79. Stanfo[illegible] Francisco.
80. Valley [illegible], Calif.
81. Riverside General Hospital, Arlington, Calif.
82. Harbor General Hospital, Torrance, Calif.
83. Glendale Sanitarium & Hospital, Glendale, Calif.
84. Glendale Sanitarium & Hospital, Glendale Calif.,
    Rancho Los Amigos, Hondo, Calif.
85. Glendale Sanitarium & Hospital, Glendale, Calif.
    Children's Hospital, Los Angeles
86. Rancho Los Amigos, Hondo, Calif.,
    Children's Hospital, Los Angeles.
87. Seaside Hospital, Long Beach, Calif.
88. Children's Hospital, Los Angeles.
89. Los Angeles County Hospital, Los Angeles.
90. Rancho Los Amigos, Hondo, Calif.
91. Los Angeles Tumor Clinic, Los Angeles.
92. Veterans Admin. Mental Hygiene Clinic, Los Angeles.
93. Veterans Admin. Center, Los Angeles, Metropolitan State Hospital, Norwalk, Calif
94. City of Hope Hospital, Duarte, Calif., Harbor General Hospital, Torrance, Calif.
95. Veterans Admin. Hospital, Los Angeles.
96. Veterans Admin. Hospital, Los Angeles,
    Huntington Memorial Hospital, Pasadena, Calif.
97. Veterans Admin. Hospital, Los Angeles,
    Harbor General Hospital, Torrance, Calif.
98. University of California Hospital, Los Angeles.
99. Children's Hospital, Los Angeles,
    St. John's Hospital, Santa Monica, Calif.
100. University of California Hospital, Los Angeles,
    Huntington Hospital, Pasadena, Calif.
101. Veterans Admin. Hospital, San Fernando, Calif.
102. Samuel Merritt Hospital, Oakland, Calif.
103. San Francisco Hospital, San Francisco.
104. Langley Porter Neuropsychiatric Institute, San Francisco.
105. Franklin Hospital, Veterans Admin. Hospital, San Francisco.
106. Sacramento County Hospital, Sacramento,
    San Francisco Hospital, Southern Pacific Hospital, San Francisco,
    Santa Clara County Hospital, San Jose, Calif.
107. San Francisco Hospital, San Francisco,
    Mills Memorial Hospital, San Mateo, Calif.
108. Franklin Hospital, San Francisco Hospital, San Francisco.
109. Veterans Admin. Hospital, San Francisco.
110. University of California Hospital, San Francisco.
111. University of California Hospital, Stanford University Hospital, San Francisco.
112. St. Luke's Hospital, San Francisco.
113. Stanford University Hospital, San Francisco.
114. Children's Hospital, Denver.
115. Presbyterian Hospital, St. Joseph's Hospital, Denver,
    St. Mary-Corwin Hospital, Pueblo, Colo.
116. St. Luke's Hospital, Denver
117. Weld County Hospital, Greeley, Colo.
118. Weld County Hospital, Greeley, Colo.,
    Colorado State Hospital, Pueblo, Colo.
119. Colorado State Hospital, Pueblo, Colo.
120. St. Joseph's Hospital, Denver,
    Parkview Hospital, Pueblo, Colo.
121. St. Mary-Corwin Hospital, Pueblo, Colo.
122. Laurel Heights Hospital, Shelton, Conn.
123. Hartford Hospital, Hartford, Conn.
124. Grace-New Haven Community Hospital, New Haven, Conn.
125. Children's Hospital, Washington, D. C.
126. District of Columbia General Hospital, Washington, D. C.,
    U. S. Public Health Service Hospital, Staten Island, N. Y.,
    Norfolk Community Hospital, Norfolk, Va.
127. District of Columbia General Hospital, Washington, D. C.
128. District of Columbia General Hospital, Washington, D. C.,
    St. Mary's Hospital, Rochester, N. Y.,
    Arlington Hospital, Arlington, Va.
129. District of Columbia General Hospital, Veterans Admin. Hospital,
    Walter Reed Army Hospital, Washington, D. C.
130. Armed Forces Institute of Pathology, Children's Hospital, District of Columbia General Hospital, Washington, D. C.
131. Walter Reed Army Hospital, Washington, D. C.

132. Armed Forces Institute of Pathology, Children's Hospital, District of Columbia General Hospital, St. Elizabeth's Hospital, Washington, D. C.
133. Armed Forces Institute of Pathology, Children's Hospital, District of Columbia General Hospital, Washington, D. C.
134. District of Columbia General Hospital, St. Elizabeth's Hospital, Washington, D. C., Veterans Admin. Hospital, Martinsburg, W. Va.
135. Columbia Hospital, Georgetown University Hospital, George Washington University Hospital, Naval Medical Center, Washington, D. C.
136. Georgetown University Hospital, George Washington University Hospital, Naval Medical Center, Walter Reed Army Hospital, Washington, D. C.
137. Children's Hospital, Washington, D. C.
138. Armed Forces Institute of Pathology, Georgetown University Hospital, Washington, D. C.
139. Georgetown University Hospital, Washington, D. C.
140. George Washington University Hospital, Washington, D. C.
141. Variety Children's Hospital, Miami, Fla.
142. Jackson Memorial Hospital, Miami, Fla.
143. Grady Memorial Hospital, Atlanta, Ga.,
Emory University Hospital, Emory University, Ga.
144. Grady Memorial Hospital, Atlanta, Ga.
145. Veterans Admin. Hospital, Atlanta, Ga.
146. Eugene Talmadge Memorial Hospital, Augusta, Ga.
147. Chicago Wesley Memorial Hospital, Chicago.
148. Children's Memorial Hospital, Columbus Hospital, Chicago.
149. Children's Memorial Hospital, Northwestern University Clinics, Chicago.
150. Cook County Hospital, Chicago.
151. Henrotin Hospital, Presbyterian-St. Luke's Hospital, Veterans Admin. West Side Hospital, Chicago.
152. Illinois Eye and Ear Infirmary, Chicago.
153. Illinois Research & Education Hospital, Chicago.
154. Mental Hygiene Clinic—West Side Veterans Admin. Hospital, Illinois Institute for Juvenile Research, Neuropsychiatric Institute, Psychiatric Institute of Municipal Courts, Chicago.
155. Municipal Tuberculosis Sanitarium, Chicago.
156. Chicago State Hospital, Chicago,
Veterans Admin. Hospital, Hines, Ill.
157. LaRabida Sanitarium, Lewis Memorial Hospital, Mercy Hospital, Municipal Contagious Disease Hospital, St. Vincent's Infant and Maternity Hospital, Chicago.
158. Children's Memorial Hospital, Chicago.
159. Lewis Memorial Hospital, Chicago.
160. Presbyterian-St. Luke's Hospital, Chicago.
161. Passavant Memorial Hospital, Chicago.
162. St. Elizabeth Hospital, Chicago.
163. University of Chicago Hospital, Chicago.
164. Chicago State Tuberculosis Sanitarium, Presbyterian-St. Luke's Hospital, Chicago.
165. Children's Memorial Hospital, Chicago; Methodist Hospital, Peoria, Ill.
166. Veterans Admin. Hospital, Hines, Ill.
167. Broadlawns-Polk County Hospital, Des Moines, Ia.
168. Kansas Children's Receiving Home, Atchison, Kan.; Girl's Industrial School, Beloit, Kan.; Larned State Hospital, Larned, Kan.; Osawatomie State Hospital, Osawatomie, Kan.; Parsons State Hospital & Training Center, Winfield State Hospital & Training Center, Parsons, Kan.; Boy's Industrial School, Kansas Treatment Center for Children, Shawnee Guidance Center, Veterans Admin. Hospital, Topeka, Kan.
169. Boys Industrial School, Family Service & Guidance Center, Kansas Treatment Center for Children, Menninger Foundation, Topeka State Hospital, Topeka, Kansas; Student Health Service, University of Kansas, Lawrence, Kans.
170. Central Baptist Hospital, Good Samaritan Hospital, Lexington, Ky.
171. Good Samaritan Hospital, Lexington, Ky.
172. Langley Porter Clinic, San Francisco; Massachusetts Mental Health Center, Boston.
173. Charity Hospital (Tulane Service), New Orleans.
174. Charity Hospital (Louisiana State University and Tulane University Units), New Orleans.
175. E. A. Conway Memorial Hospital, Monroe, La.
176. Charity Hospital (Tulane Service), Crippled Children's Hospital, New Orleans.
177. Charity Hospital, New Orleans, La.; Watts Hospital, Durham, N. C.
178. E. A. Conway Memorial Hospital, Monroe, La; Huey P. Long Charity Hospital, Pineville, La.
179. Huey P. Long Charity Hospital, Pineville, La.
180. Baltimore City Hospitals; University Hospital, Baltimore.
181. Hospital for the Women of Maryland, Baltimore.
182. Johns Hopkins Hospital, Baltimore.
183. Kanner's Clinic, Baltimore.
184. Johns Hopkins Hospital, University Hospital, Baltimore.
185. Johns Hopkins Hospital, Veterans Admin. Hospital, Baltimore.
186. University Hospital, Baltimore.
187. Peninsula General Hospital, Salisbury, Md.
188. Beth Israel Hospital, Boston.
189. Beth Israel Hospital, Boston.
190. Boston City Hospital, Boston.
191. Boston City Hospital, Children's Medical Center, Boston.
192. Boston City Hospital, Massachusetts Memorial Hospital, Boston.
193. Boston City Hospital, Sanatorial Division of Boston City Hospital, Boston; Veterans Admin. Hospital, Providence, R. I.
194. Boston Floating Hospital, Boston.
195. Boston Lying-In Hospital, Boston.
196. Boston Lying-In Hospital, New England Deaconess Hospital, Boston; Veterans Admin. Hospital, West Roxbury, Mass.
197. Boston State Hospital, Massachusetts. Mental Health Institute, Boston; Metropolitan State Hospital, Waltham, Mass.; Worcester State Hospital, Worcester, Mass.
198. Carney Hospital, St. Elizabeth Hospital, Boston; Beth Israel Hospital, Brookline, Mass.; Newton-Wellesley Hospital, Newton, Mass.
199. Freedmen's Hospital, Washington, D. C., Carney Hospital, St. Elizabeth Hospital, Boston, Beth Israel Hospital, Brookline, Mass.
200. Children's Medical Center, Boston.
201. Pondville Hospital, Walpole, Mass.
202. Children's Hospital, Boston; Burbank Hospital, Fitchburg, Mass.; Veterans Admin. Hospital, West Roxbury, Mass.
203. Children's Hospital, Boston; Duke University Affiliated Hospitals, Durham, N. C.
204. Faulkner Hospital, Boston.
205. Lahey Clinic, Boston.
206. Lemuel Shattuck Hospital, Boston.
207. Lemuel Shattuck Hospital, Massachusetts General Hospital, Boston.
208. Massachusetts General Hospital, Boston.
209. Quigley Memorial Hospital, Chelsea, Mass.
210. Soldiers Home, Chelsea, Mass.
211. Fall River General Hospital, Fall River, Mass.
212. Lynn Hospital, Lynn, Mass.
213. Pondville State Sanatorium, Walpole, Mass.
214. Veterans Admin. Hospital, West Roxbury, Mass.
215. Veterans Admin. Hospital, Ann Arbor, Mich.
216. Veterans Admin. Hospital, Dearborn, Mich.
217. Veterans Admin. Hospital, Dearborn, Mich.; Children's Hospital, Detroit.
218. Children's Hospital, Detroit.
219. Children's Hospital, Detroit Receiving Hospital, Detroit.
220. Children's Hospital, Women's Hospital, Detroit.
221. Children's Hospital, Detroit Receiving Hospital, Detroit; Wayne County General Hospital, Eloise, Mich.
222. Detroit Memorial Hospital, Detroit.
223. Detroit Memorial Hospital, Detroit Receiving Hospital, Women's Hospital, Detroit.
224. Detroit Receiving Hospital, Detroit.
225. Detroit Receiving Hospital, Veterans Admin. Hospital, Detroit.
226. Wayne County General Hospital & Infirmary, Eloise, Mich.
227. Minneapolis General Hospital, Minneapolis.
228. University of Minnesota Hospitals, Minneapolis.
229. Veterans Admin. Regional Office, Minneapolis.
230. University of Minnesota Hospital, Minneapolis; Ancker Hospital, St. Paul, Minn.
231. Veterans Admin. Hospital, Minneapolis.
232. Veterans Admin. Hospital, Minneapolis; Ancker Hospital, Gillette State Hospital, St. Paul, Minn.
233. Ancker Hospital, Miller Hospital, St. Joseph's Hospital, St. Paul, Minn.; Fargo Clinic, Fargo, N. D.
234. Mississippi State Charity Hospital, Vicksburg, Miss.
235. Children's Mercy Hospital, Kansas City, Mo.
236. Koch Hospital, Koch, Mo.; Barnes Hospital, Veterans Admin. Hospital, St. Louis.
237. Barnes Hospital, St. John's Hospital, St. Louis State Hospital, St. Louis.
238. Cardinal Glennon Hospital, St. Louis.
239. Cardinal Glennon Hospital, St. Mary's Hospital, St. Louis.
240. Homer G. Phillips Hospital, Veterans Admin. Hospital, St. Louis.
241. Malcolm Bliss Hospital, St. Louis.
242. Renard Hospital, St. Louis State Hospital, St. Louis.
243. St. Louis Maternity Hospital, St. Mary's Hospital, St. Louis.
244. Veterans Admin. Hospital, St. Louis.
245. Creighton University Hospitals, University of Nebraska Hospital, Omaha.
246. Douglas County Hospital, Omaha.
247. Nebraska Methodist Hospital, University of Nebraska Hospital, Omaha.
248. St. Joseph's Hospital, Omaha.
249 University of Nebraska Hospital, Omaha.
250. Margaret Hague Hospital, Jersey City, N. J.
251. Babies Hospital, Newark, N. J., Orange Memorial Hospital, Orange, N. J.
252. Babies Hospital-Coit Memorial, Presbyterian Hospital, St. Michael's Hospital, Newark, N. J.
253. Hospital for Crippled Children, Newark, N. J., Kessler Institute for Rehabilitation, West Orange, N. J.
254. New Jersey Sanatorium for Chest Diseases, Glen Gardner, N. J.
255. Orange Memorial Hospital, Orange, N. J.
256. Bataan Methodist Memorial Hospital, Bernalillo County-Indian Hospital, Albuquerque, N. Mex.
257. Albany Hospital, Albany, N. Y.
258. Veterans Admin. Hospital, Albany, N. Y.
259. Anthony N. Brady Memorial Hospital, Albany, N. Y.
260. Veterans Admin. Hospital, Batavia, N. Y.; Highland Hospital, Rochester, N. Y.
261. Kings County Hospital, Brooklyn, N. Y.
262. Long Island College Hospital, Brooklyn, N. Y.
263. Long Island College Hospital, St. John's Episcopal Hospital, Brooklyn.
264. St. John's Episcopal Hospital, Brooklyn.
265. Veterans Admin. Hospital, Brooklyn.
266. Buffalo Children's Hospital, Buffalo
267. Buffalo Eye & Ear Hospital, Buffalo.
268. Buffalo General Hospital, Children's Hospital, Buffalo
269. Buffalo General Hospital, Edw. J. Roswell Memorial Hospital, Millard Fillmore Hospital, Buffalo.
270. Buffalo General Hospital, Roswell Park Memorial Hospital, Buffalo.
271. Roswell Park Memorial Hospital, Buffalo.
272. Roswell Park Memorial Hospital, Sisters of Charity Hospital, Buffalo.
273. Central Islip State Hospital, Central Islip, N. Y.; University Hospital, Veterans Admin. Hospital (Manhattan), New York City.
274. Meadowbrook Hospital, Hempstead, N. Y.; Bellevue Hospital, New York City.
275. Meadowbrook Hospital, Hempstead, N. Y.; University Hospital, Veterans Admin. Hospital (Manhattan), New York City.
276. Queens Hospital, Jamaica, N. Y.
277. Triboro Hospital, Jamaica, N. Y.
278. Triboro Hospital, Jamaica, N. Y.; North Shore Hospital, Manhasset, N. Y.

279. Beekman-Downtown Hospital, Memorial Center, St. Luke's Hospital, Women's Div., New York City.
280. Beekman-Downtown Hospital, University Hospital, New York City.
281. Bellevue Hospital, Div.-III, New York City.
282. Bellevue Hospital Center, Div.-IV, New York City.
283. Bellevue Hospital, University Hospital, New York City.
284. Bellevue Medical Center, New York City.
285. Bronx Municipal Hospital, New York City.
286. Columbia-Presbyterian Medical Center, New York City.
287. Columbia University Medical Center, Montefiore Hospital, New York City.
288. Francis Delafield Hospital, Goldwater Memorial Hospital, New York City.
289. Goldwater Memorial Hospital, Institute of Physical Medicine & Rehabilitation, Montefiore Hospital, St. Barnabas Hospital, St. Vincent's Hospital, University Hospital, Veterans Admin. Hospital (Manhattan), New York City; Grasslands Hospital, Valhalla, N. Y., New York State Rehabilitation Hospital, West Haverstraw, N. Y.
290. Hospital for Joint Diseases, New York City.
291. Knickerbocker Hospital, University Hospital, New York City.
292. Knickerbocker Hospital, University Hospital, Veterans Admin. Hospital (Manhattan), New York City.
293. Lenox Hill Hospital, New York City.
294. Memorial Hospital for Cancer and Allied Diseases, New York City
295. Memorial Hospital, Mount Sinai Hospital, New York City.
296. Mount Sinai Hospital, New York City.
297. Montefiore Hospital, New York City.
298. New York Hospital, New York City.
299. Payne Whitney Clinic, New York City.
300. New York State Psychiatric Institute, New York City.
301. New York Psychiatric Institute, New York City.
302. Presbyterian Hospital, New York City.
303. Presbyterian Hospital, New York City.
304. St. Luke's Hospital, New York City.
305. University Hospital, New York City.
306. University Hospital, Veterans Admin. Hospital (Manhattan), New York City.
307. Genesee Hospital, Rochester, N. Y.
308. Highland Hospital, Rochester, N. Y
309. Rochester State Hospital, Rochester, N. Y.
310. Strong Memorial-Rochester Municipal Hospital, Rochester, N. Y.
311. Eastern New York Children's Orthopedic Hospital, Schenectady, N. Y.
312. Ellis Hospital, Schenectady, New York.
313. State Hospital, Butner, N. C.; State Hospital, Raleigh, N. C.
314. Charlotte Memorial Hospital, Charlotte, N. C., Lincoln Hospital, North Carolina Cerebral Palsy Hospital, Watts Hospital Durham, N. C.; Shriners Hospital for Crippled Children, Gastonia, S. C ; Warm Springs Foundation, Warm Springs, Ga.
315. Veterans Admin. Hospital, Durham, N. C.
316 Veterans Admin. Hospital, Watts Hospital, Durham, N. C.; North Carolina Sanitarium, McCain, N. C.
317. North Carolina Orthopedic Hospital, Gastonia, N. C.
318. Children's Hospital, Akron, Ohio.
319. Veterans Admin. Hospital, Brecksville, Ohio.
320. Veterans Admin. Hospital, Brecksville, Ohio; Metropolitan General Hospital, University Hospital, Cleveland.
321. Veterans Admin. Hospital, Breckville, Ohio; Sunny Acres-Cuyahoga County Tuberculosis Hospital, Cleveland General, Sinai Hospital, Cleveland.
322. Cincinnati General Hospital, Cincinnati, Ohio.
323. Cincinnati General Hospital, Cincinnati, Ohio; University of Virginia Hospital, Charlottesville, Va.; Lynchburg General Hospital, Lynchburg, Va.
324. Longview State Hospital, Cincinnati.
325. Veterans Admin. Hospital, Cincinnati, Ohio.
326. Booth Memorial Hospital, Cleveland.
327. Cleveland Clinic Hospital, Cleveland.
328. Cleveland Guidance Center, Cleveland.
329. Highland View Hospital, Metropolitan General Hospital, Cleveland.
330. Metropolitan General Hospital, Cleveland.
331. Metropolitan General Hospital, University Hospital, Cleveland.
332. St. Luke's Hospital, Cleveland.
333. St. Vincent's Charity Hospital, Cleveland.
334. University Hospitals, Cleveland.
335. Veterans Admin. Hospital, Cleveland.
336. Children's Hospital, Columbus, Ohio.
337. Children's Hospital, University Hospitals, Columbus, Ohio.
338. Children's Mental Health Center & Receiving Hospital for Children, Columbus Psychiatric Clinic, White Cross Hospital, Columbus, Ohio.
339. Columbus Psychiatric Institute and Hospital, Columbus, Ohio.
340. James Hospital, Ohio State Penitentiary Hospital, Columbus, Ohio.
341. Ohio Tuberculosis Hospital, Columbus, Ohio.
342. St. Ann's Hospital for Women, Columbus, Ohio.
343. White Cross Hospital, Columbus, Ohio.
344. Maumee Valley Hospital, Toledo, Ohio.
345. Central State Hospital, Norman, Oklahoma, Mercy Hospital, Oklahoma City, Okla.
346. Student Health Center, Norman, Okla., Community Guidance Center, Oklahoma City, Okla.
347. Crippled Children's Hospital, Mercy Hospital, Oklahoma City, Okla.
348. Mercy Hospital, Oklahoma City, Okla.
349. St. Anthony's Hospital, Oklahoma City, Okla.
350. Veterans Admin. Hospital, Oklahoma City, Okla.
351. Wesley Hospital, Oklahoma City, Okla.
352. Wesley Hospital, Oklahoma City, Okla.; St. John's Hospital, Tulsa, Okla.
353. Oregon State Hospital, Salem, Ore.
354. Norristown State Hospital, Norristown, Pa.
355. Jefferson Medical College Hospital, Philadelphia.
356. Pennsylvania Hospital, Philadelphia.
357. Philadelphia General Hospital, Philadelphia.
358. St. Christopher's Hospital, Philadelphia.
359. Philadelphia Psychiatric Hospital, Philadelphia.
360. Temple University Hospital, Philadelphia.
361. University of Pennsylvania Hospital, Philadelphia.
362. Allegheny General Hospital, Pittsburgh.
363. Allegheny General Hospital, Children's Hospital, Pittsburgh.
364. Veterans Admin. Hospital, Pittsburgh.
365. University of Pittsburgh Medical Center, Pittsburgh.
366. Eastern Pennsylvania Psychiatric Institute, Philadelphia; Children's Service Center, Wilkes-Barre, Pa.
367. Newport Hospital, Newport, R. I.
368. John Gaston Hospital, Memphis, Tenn.
369. Vanderbilt University Hospital, Nashville, Tenn.
370. Nashville General Hospital, Nashville, Tenn.
371. Baylor University Hospital, Children's Medical Center, Parkland Memorial Hospital, Dallas, Texas.
372. Children's Medical Center, Parkland Memorial Hospital, Dallas, Texas.
373. Children's Medical Center, Gaston Hospital, Parkland Memorial Hospital, Dallas, Texas.
374. Parkland Memorial Hospital, Dallas, Texas.
375. Hermann Hospital, Texas Medical Center, Houston, Texas.
376. M. D. Anderson Hospital for Cancer Research, Houston, Texas.
377. M. D. Anderson Hospital for Cancer Research, Southern Pacific Hospital, Houston, Texas.
378. Veterans Admin. Hospital, Temple, Texas.
379. Primary Children's Hospital, Salt Lake City.
380. Dr. Wm. H. Groves Latter-Day Saints Hospital, Holy Cross Hospital, Primary Children's Hospital, St. Mark's Hospital, Shriners Hospital for Crippled Children, Salt Lake City, Utah.
381. Thos. D. Dee Memorial Hospital, Ogden, Utah; Holy Cross Hospital, Dr. Wm. H. Groves Latter-Day Saints Hospital, Salt Lake City, Utah.
382. University of Virginia Hospital, Charlottesville, Va.
383. U. S. Army Hospital, Fort Belvoir, Va.
384. Norfolk Community Hospital, Norfolk, Va.; Provident Hospital, Baltimore, Md.; Soldiers' Home, Chelsea, Mass.
385. Medical College of Virginia—Hospital Division, Richmond, Va.
386 Veterans Admin. Hospital, Richmond, Va.
387. Children's Orthopedic Hospital, Seattle, Wash.
388. Madison General Hospital, St. Mary's Hospital, Madison, Wis.
389. Mendota State Hospital, Madison, Wis.
390. Veterans Admin. Hospital, Madison, Wis.
391. Wisconsin General Hospital, Madison, Wis.
392. Wisconsin General Hospital, Madison, Wis.; Milwaukee Children's Hospital, Milwaukee; Veterans Admin. Hospital, Milwaukee (Wood), Wis.
393. House of Good Shepherd, Mount Sinai Hospital, Milwaukee.
394. Mental Hygiene Clinic, Veterans Admin. Regional Office, Milwaukee Child Guidance Clinic, Milwaukee County Hospital, Milwaukee.
395. Martha Washington Hospital, Milwaukee County Hospital, Milwaukee.
396. Milwaukee Children's Hospital, Milwaukee.
397. Milwaukee Children's Hospital, Milwaukee; Veterans Admin. Hospital, Milwaukee (Wood), Wis.
398. Milwaukee County Blood Center, Milwaukee; Veterans Admin. Hospital, Milwaukee (Wood), Wis.
399. Milwaukee County General Hospital, Milwaukee.
400. Milwaukee Hospital, Milwaukee.
401. St. Joseph's Hospital, Milwaukee.
402. Milwaukee Children's Hospital, Milwaukee County General Hospital, Milwaukee.
403. University of Chicago Clinics, Chicago; Milwaukee Children's Hospital, Milwaukee Hospital, Milwaukee.
404. Montreal Neurological Institute, Montreal, Que.
405. Queen's Hospital, Honolulu, Hawaii.
406. San Juan City Hospital, San Juan, P. R.
407. Clinica Dr. E. Fernandez Garcia, Clinica Dr. M. Julia, San Juan, P. R.; Veterans Admin. Hospital, New York (Bronx), New York.
408. Oncologic Hospital, Santurce, P. R.; San Juan City Hospital, San Juan, P. R.
409. Thos. D., Dee Memorial Hospital, Ogden, Utah; Holy Cross Hospital, St. Mark's Hospital, Salt Lake County General Hospital, Veterans Admin. Hospital, Salt Lake City.
410. Jefferson Davis Hospital, Methodist Hospital, Texas Children's Hospital, Veterans Admin. Hospital, Houston, Texas.
411. Presbyterian Hospital, Chicago, and St. Luke's Hospital, Chicago, merged physically into one unit July 1, 1959 to be known as Presbyterian-St. Luke's Hospital, Chicago.
412. Montefiore Hospital, New York City.
413. Includes four months rotation to St. Joseph's Hospital, Houston, Texas.
414. California Babies Hospital, Los Angeles.
415. Charity Hospital of Louisiana (LSU Unit).
416. Children's Hospital, Philadelphia.
417. St. Vincent's Hospital, New York City.
418. Morrisania City Hospital, New York City.
419. Duke Hospital, Durham, N. C.
420. City of Memphis Hospital, Memphis, Tenn.
421. St. Luke's and Children's Medical Center, Philadelphia.
422. Bronx Municipal Hospital Center, New York City.
423. University of Illinois Research and Education Hospital, Michael Reese Hospital, Chicago.
424. University Hospital, New York City.
425. Veterans Admin. Hospital, San Fernando, Calif.
426 Veterans Admin. Hospital, Dearborn, Mich.; Detroit Memorial Hospital, Detroit.
427. University of Southern California, Los Angeles.
428. Appointments also available for pre-specialty training in surgery.
429. St. Christopher's Hospital For Children, Philadelphia.
430. In addition to a program of three intramural years at university hospitals, a separate three year program of two years at university hospitals and one year at Veterans Admin. hospital is afforded.
431. Bernalillo County-Indian Hospital, Albuquerque, N. Mex.
432. Skin and Cancer Hospital of Philadelphia.
433. Second year afforded through affiliation at Mary Fletcher Hospital, Burlington, Vt.

APPROVED RESIDENCY TRAINING PROGRAMS

Number of Institutions, 1,305, Number of Program, 5,531

Name	Location	Approved Residencies
Birmingham Baptist Hospitals ★	Birmingham, Ala.	Path., Rad.
Carraway Methodist Hospital ★	Birmingham, Ala.	Gen'l Pract., Int. Med., Obst., Path., Surg., Urol.
Children's Hospital	Birmingham, Ala.	Ped.
Crippled Children's Hospital	Birmingham, Ala.	Neur., Ortho. Surg., Psych.
University Hospital and Hillman Clinic ★	Birmingham, Ala.	Anes., Derm., Int. Med., Neur., Neuro Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Thor. Surg., Urol.
Veterans Admin. Hospital	Birmingham, Ala.	Int. Med., Neur., Ophth., Ortho. Surg., Otol., Path., Psych., Rad., Sur., Urol.
Lloyd Noland Hospital ★	Fairfield, Ala.	Anes., Derm., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Surg.
Mobile General Hospital ★	Mobile, Ala.	Int. Med., Ortho. Surg., Path., Ped., Surg.
U. S. Air Force Hospital	Montgomery, Ala.	Gen'l Pract.
Veterans Admin. Hospital	Tuskegee, Ala.	Int. Med., Ophth., Psych., Surg.
Good Samaritan Hospital ★	Phoenix, Ariz.	Gen'l Pract., Ob.-Gyn., Path.
Maricopa County General Hospital ★	Phoenix, Ariz.	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Ped., Pul. Dis., Surg.
St. Joseph's Hospital ★	Phoenix, Ariz.	Int. Med., Ob.-Gyn., Path., Ped., Surg.
St. Mary's Hospital ★	Tucson, Ariz.	Gen'l Pract., Int. Med., Surg.
Tucson Medical Center ★	Tucson, Ariz.	Int. Med., Surg.
Arkansas Baptist Hospital ★	Little Rock, Ark.	Ophth., Path., Surg.
Arkansas Children's Hospital	Little Rock, Ark.	Ortho. Surg.
Arkansas State Hospital	Little Rock, Ark.	Psych.
St. Vincent Infirmary ★	Little Rock, Ark.	Anes.
University Hospital ★	Little Rock, Ark.	Anes., Gen'l Pract., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Psych., Rad., Surg., Urol.
Veterans Admin. Hospital	Little Rock, Ark.	Int. Med., Ortho. Surg., Path., Surg.
Veterans Admin. Hospital	No. Little Rock, Ark.	Path., Psych.
St. Michael's Hospital	Texarkana, Ark.	Gen'l Pract.
Agnews State Hospital	Agnew, Calif.	Psych.
General Hospital of Riverside County ★	Arlington, Calif.	Gen'l Pract., Int. Med., Surg.
Kern County General Hospital ★	Bakersfield, Calif.	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg., Urol.
Herrick Memorial Hospital ★	Berkeley, Calif.	Int. Med., Ob.-Gyn., Path., Psych.
State of California	Berkeley, Calif.	Pub. Health
St. Joseph Hospital	Burbank, Calif.	Path.
Camarillo State Hospital	Camarillo, Calif.	Psych.
Compton Sanitarium	Compton, Calif.	Psych.
City of Hope Medical Center	Duarte, Calif.	Card. Dis., Int. Med., Path., Pul. Dis., Rad., Surg., Thor. Surg.
Sonoma State Hospital	Eldridge, Calif.	Psych.
U. S. Army Hospital	Fort Ord, Calif.	Pub. Health
General Hospital of Fresno County ★	Fresno, Calif.	Int. Med., Ob.-Gyn., Ophth., Ped., Surg.
Glendale Sanitarium and Hospital ★	Glendale, Calif.	Int. Med., Ob.-Gyn., Path.
Scripps Clinic and Research Foundation	La Jolla, Calif.	Allergy, Int. Med.
Loma Linda Sanitarium and Hospital ★	Loma Linda, Calif.	Anes., Path.
St. Mary's Long Beach Hospital ★	Long Beach, Calif.	Gen'l Pract., Path.
Seaside Memorial Hospital ★	Long Beach, Calif.	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Veterans Admin. Hospital	Long Beach, Calif.	Allergy, Card. Dis., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ophth., Ortho. Surg., Path., Psych., Rad., Surg., Urol.
Barlow Sanatorium	Los Angeles	Pul. Dis.
California Babies' and Children's Hospital	Los Angeles	Ped.
California Hospital ★	Los Angeles	Ob.-Gyn., Path., Surg.
Cedars of Lebanon Hospital ★	Los Angeles	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Children's Hospital ★	Los Angeles	Ortho. Surg., Path., Ped.
Hospital of the Good Samaritan ★	Los Angeles	Int. Med., Ob.-Gyn., Path., Pul. Dis., Rad., Surg.
Kaiser Foundation Hospital	Los Angeles	Ob.-Gyn., Urol.
Los Angeles County Hospital ★	Los Angeles	Anes., Card. Dis., Derm., Int. Med., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Psych., Pul. Dis., Rad., Surg., Urol.
Los Angeles Eye and Ear Hospital	Los Angeles	Ophth., Otol.
Mount Sinai Hospital	Los Angeles	Path., Psych.
Orthopaedic Hospital	Los Angeles	Ortho. Surg.
Presbyterian Hospital-Olmsted Memorial ★	Los Angeles	Int. Med., Ob.-Gyn., Surg.
Queen of Angels Hospital ★	Los Angeles	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
St. Vincent's Hospital ★	Los Angeles	Int. Med., Path., Surg.
Santa Fe Coast Lines Hospital ★	Los Angeles	Surg.
Shriners Hospital For Crippled Children	Los Angeles	Ortho. Surg.
University of California Hospital ★	Los Angeles	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped. Allergy, Ped., Plas. Surg., Psych., Rad., Surg., Urol.
Veterans Admin. Hospital ★	Los Angeles	Anes., Card. Dis., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ophth., Ortho. Surg., Otol., Path., Phys. Med., Plas. Surg., Psych., Rad., Surg., Thor. Surg., Urol.
White Memorial Hospital ★	Los Angeles	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys Med., Proct., Rad., Surg., Urol.
Contra Costa County Hospital	Martinez, Calif.	Gen'l Pract.
Stanislaus County Hospital	Modesto, Calif.	Gen'l Pract.
Bret Harte Sanatorium	Murphys, Calif.	Pul. Dis.
Metropolitan State Hospital	Norwalk, Calif.	Psych.
Children's Hospital of the East Bay	Oakland, Calif.	Ortho. Surg., Path., Ped.
Highland-Alameda County Hospital ★	Oakland, Calif.	Anes., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Rad., Surg., Thor. Surg., Urol.
Kaiser Foundation Hospital ★	Oakland, Calif.	Gen'l Pract, Int. Med., Ob.-Gyn., Path., Ped., Surg.
Samuel Merritt Hospital	Oakland, Calif.	Ortho. Surg., Path., Surg.
U. S. Naval Hospital ★	Oakland, Calif.	Anes., Gen'l Pract., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Urol.
Veterans Admin. Hospital	Oakland, Calif.	Int. Med., Neur., Path., Surg.
Orange County General Hospital ★	Orange, Calif.	Int. Med., Rad.
Palo Alto-Stanford Hospital Center ★	Palo Alto, Calif.	Anes., Derm., Int. Med., Neur., Ob.-Gyn., Otol., Ortho. Surg., Path., Ped., Psych., Rad., Surg.
Veterans Admin. Hospital	Palo Alto, Calif.	Psych.
Collis P. and Howard Huntington Memorial Hospital ★	Pasadena, Calif.	Int. Med., Neuro. Surg., Path., Plas. Surg., Surg.
Pacific State Hospital	Pomona, Calif.	Psych.
Patton State Hospital	Patton, Calif.	Psych.
Sequoia Hospital	Redwood City, Calif.	Path.
	Sacramento, Calif.	Path.
	Sacramento, Calif.	Gen'l Pract., Path.
	Sacramento, Calif.	Rad.
Monterey County Hospital	Salinas, Calif.	Gen'l Pract.

★ Indicates hospitals approved for training interns.

Name	Location	Approved Residencies
San Bernardino County Charity Hospital ★	San Bernardino, Calif.	Int. Med., Path., Surg.
Donald N. Sharp Memorial Hospital	San Diego, Calif.	Path.
Mercy Hospital ★	San Diego, Calif.	Int. Med., Ob.-Gyn., Path., Surg.
✓San Diego County General Hospital ★	San Diego, Calif.	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Pul. Dis., Rad., Surg., Urol.
✓U. S. Naval Hospital ★	San Diego, Calif.	Anes., Card. Dis., Derm., Gen'l Pract., Int. Med., Ob.-Gyn., Ophth., Otol., Path., Ped., Rad., Surg., Thor. Surg., Urol.
Children's Hospital ★	San Francisco	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Otol.; Ped., Rad.
Franklin Hospital	San Francisco	Ortho. Surg., Path., Plas. Surg.
French Hospital ★	San Francisco	Int. Med., Path., Surg.
Headquarters 6th U. S. Army	San Francisco	Pub. Health
Kaiser Foundation Hospital ★	San Francisco	Allergy, Anes., Int. Med., Ob.-Gyn., Path., Ped., Psych., Surg.
Langley Porter Neuropsychiatric Institute	San Francisco	Psych.
✓Letterman Army Hospital ★	San Francisco	Anes., Card. Dis., Derm., Gastro., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Phys. Med., Psych., Rad., Surg., Thor. Surg., Urol.
Mary's Help Hospital ★	San Francisco	Int. Med., Ob.-Gyn., Surg.
Mount Zion Hospital ★	San Francisco	Int. Med., Path., Ped., Psych., Rad., Surg.
St. Francis Memorial Hospital	San Francisco	Ob.-Gyn., Path., Plas. Surg., Psych.
St. Joseph's Hospital ★	San Francisco	Anes., Ob.-Gyn., Ortho. Surg., Surg.
St. Luke's Hospital ★	San Francisco	Int. Med., Ob.-Gyn., Path., Ped., Surg.
St. Mary's Hospital ★	San Francisco	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Psych., Rad., Surg.
✓San Francisco Hospital ★	San Francisco	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Otol., Path., Ped., Rad., Surg., Urol.
Shriners Hospital For Crippled Children	San Francisco	Ortho. Surg.
✓Southern Pacific General Hospital ★	San Francisco	Int. Med., Surg., Urol.
U. S. Public Health Service Hospital ★	San Francisco	Int. Med., Ophth., Ortho. Surg., Surg.
✓University of California Hospital ★	San Francisco	Anes., Card. Dis., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Ped. Allergy, Phys Med., Rad., Surg., Urol.
✓Veterans Admin. Hospital	San Francisco	Int. Med., Neur., Ophth., Ortho. Surg., Otol., Path., Rad., Surg., Urol.
O'Connor Hospital	San Jose, Calif.	Path.
Santa Clara County Hospital ★	San Jose, Calif.	Anes., Int. Med., Ob.Gyn., Path., Ped., Pul. Dis., Rad., Surg., Urol.
✓Community Hospital of San Mateo County	San Mateo, Calif.	Int. Med., Ob.-Gyn., Ophth., Path., Ped., Surg., Urol.
Brookside Hospital	San Pablo, Calif.	Path.
Santa Barbara Cottage Hospital ★	Santa Barbara, Calif.	Int. Med., Path., Surg.
Santa Barbara General Hospital	Santa Barbara, Calif.	Gen'l Pract., Surg.
St. John's Hospital ★	Santa Monica, Calif.	Ob.-Gyn., Path., Ped., Surg.
Sonoma County Hospital	Santa Rosa, Calif.	Gen'l Pract.
Veterans Admin. Hospital	Sepulveda, Calif.	Int. Med., Psych.
Tulare-Kings Counties Joint Tuberculosis Hospital	Springville, Calif.	Pul. Dis.
San Joaquin General Hospital ★	Stockton, Calif.	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Stockton State Hospital	Stockton, Calif.	Psych.
✓Mendocino State Hospital	Talmage, Calif.	Psych.
✓Harbor General Hospital ★	Torrance, Calif.	Anes., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Rad., Surg., Thor. Surg., Urol.
Kaiser Foundation Hospital	Vallejo, Calif.	Phys. Med.
General Hospital Ventura County	Ventura, Calif.	Gen'l Pract.
Gorgas Hospital ★	Ancon, Canal Zone	Int. Med., Ob.-Gyn., Ophth., Path., Ped., Surg.
Community Hospital	Boulder, Colo.	Gen'l Pract.
Penrose Hospital ★	Colorado Springs, Colo.	Gen'l Pract., Path., Rad.
St. Francis Hospital	Colorado Springs, Colo.	Gen'l Pract.
Children's Hospital	Denver	Ortho. Surg., Path., Ped., Surg.
Fitzsimons Army Hospital ★	Denver	Anes., Card. Dis., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Pul. Dis., Rad., Surg., Thor. Surg.
General Rose Memorial Hospital ★	Denver	Card. Dis., Path., Rad.
Mercy Hospital★	Denver	Gen'l Pract., Int. Med., Path., Surg.
National Jewish Hospital	Denver	Pul. Dis., Thor. Surg.
Porter Sanitarium and Hospital ★	Denver	Path.
Presbyterian Hospital★	Denver	Int. Med., Ob.-Gyn., Path., Rad., Surg.
St. Anthony Hospital ★	Denver	Path.
St. Joseph's Hospital ★	Denver	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Rad., Surg.
St. Luke's Hospital ★	Denver	Int. Med., Path., Rad., Surg.
✓University of Colorado Medical Center		
Colorado General Hospital ★	Denver	Anes., Derm., Gen'l Pract., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped. Allergy, Ped., Phys. Med., Pul. Dis., Rad., Surg., Urol.
Colorado Psychopathic Hospital	Denver	Psych.
✓Denver General Hospital ★	Denver	Anes., Gen'l Pract., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped. Allergy, Ped., Pul. Dis., Rad., Surg., Urol.
✓Veterans Admin. Hospital	Denver	Anes., Int. Med., Neur., Neuro. Surg., Ortho. Surg., Path., Phys. Med., Psych., Rad., Surg., Thor. Surg., Urol.
Colorado State Hospital	Pueblo, Colo.	Int. Med., Path., Psych., Surg.
St. Mary-Corwin Hospital ★	Pueblo, Colo.	Gen'l Pract., Int. Med., Surg.
Bridgeport Hospital ★	Bridgeport, Conn.	Anes., Gen'l Pract., Int. Med., Obst., Path., Rad., Surg.
St. Vincent's Hospital ★	Bridgeport, Conn.	Int. Med., Obst., Path., Rad., Surg.
Danbury Hospital ★	Danbury, Conn.	Path.
Griffin Hospital ★	Derby, Conn.	Path.
Greenwich Hospital ★	Greenwich, Conn.	Int. Med., Path., Surg.
Hartford Hospital ★	Hartford, Conn.	Anes., Int. Med., Neuro. Surg., Ob.-Gyn., Path., Ped., Rad., Surg.
Hartford Municipal Hospital and Health Center ★	Hartford, Conn.	Int. Med., Surg.
Institute of Living	Hartford, Conn.	Psych.
St. Francis Hospital ★	Hartford, Conn.	Anes., Int. Med., Ob.-Gyn., Path., Ped., Surg.
Meriden Hospital ★	Meriden, Conn.	Path.
Connecticut State Hospital	Middletown, Conn.	Psych.
Middlesex Memorial Hospital ★	Middletown, Conn.	Path.
New Britain General Hospital ★	New Britain, Conn.	Int. Med., Ob.-Gyn., Path., Surg.
Silver Hill Foundation	New Canaan, Conn.	Psych.
Hospital of St. Raphael ★	New Haven, Conn.	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Rad., Surg., Thor. Surg.
Yale-New Haven Medical Center		
✓ Grace-New Haven Community Hospital ★	New Haven, Conn.	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Psych., Rad., Surg., Thor. Surg., Urol.
✓Veterans Admin. Hospital	West Haven, Conn.	Card. Dis., Gastro., Int. Med., Neur., Path., Psych., Surg., Urol.
Yale University Dept. of Public Health	New Haven, Conn.	Occ. Med.
Cedarcrest Hospital	Newington, Conn.	Pul. Dis., Thor. Surg.
Newington Home and Hospital for Crippled Children	Newington, Conn.	Ortho. Surg.
Veterans Admin. Hospital	Newington, Conn.	Int. Med., Path., Surg.
Lawrence and Memorial Hospitals ★	New London, Conn.	Int. Med., Ob.-Gyn., Surg.
Fairfield State Hospital	Newtown, Conn.	Psych.
Norwalk Hospital ★	Norwalk, Conn.	Int. Med., Ob.-Gyn., Path., Surg.
Norwich State Hospital	Norwich, Conn.	Psych.
Uncas-on-Thames Hospital	Norwich, Conn.	Pul. Dis., Thor. Surg.

★ Indicates hospitals approved for training interns.

Name	Location	Approved Residencies
State of Connecticut Vet. Home and Hospital	Rocky Hill, Conn.	Phys. Med.
Laurel Heights Hospital	Shelton, Conn.	Pul. Dis.
Stamford Hospital ★	Stamford, Conn.	Path., Surg.
Charlotte Hungerford Hospital	Torrington, Conn.	Gen'l Pract.
St. Mary's Hospital ★	Waterbury, Conn.	Anes., Int. Med., Path., Rad., Surg.
Waterbury Hospital ★	Waterbury, Conn.	Int. Med., Path., Ped., Rad., Surg.; Urol.
[illegible]	Dover, Del.	Pub. Health
[illegible]	Del.	Psych.
Alfred I. Du Po [illegible]	Del.	Ortho. Surg.
Delaware Hospit [illegible]	Del.	Card. Dis., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg., Urol.
Memorial Hospi [illegible]	Del.	Int. Med., Path., Surg.
Wilmington General Hospital ★	Del.	Gen'l Pract., Int. Med., Ob.-Gyn., Path.
Armed Forces Institute of Pathology	Washington, D. C.	Path.
Army Medical Center (Walter Reed Army Hospital) ★	Washington, D. C.	Allergy, Anes., Card. Dis., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Psych., Rad., Surg., Thor. Surg., Urol.
Children's Hospital	Washington, D. C.	Neuro. Surg., Path., Ped. Allergy, Ped., Psych., Surg.
Columbia Hospital For Women and Lying-In Asylum	Washington, D. C.	Ob.-Gyn.
District of Columbia General Hospital ★	Washington, D. C.	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Phys. Med., Psych., Pul. Dis., Surg., Urol.
Doctors Hospital ★	Washington, D. C.	Int. Med., Ob.-Gyn., Path., Rad., Surg.
Eastern Dispensary and Casualty Hospital	Washington, D. C.	Surg.
Freedmen's Hospital ★	Washington, D. C.	Card. Dis., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Ped., Psych., Pul. Dis., Rad., Surg., Urol
Georgetown University Hospital ★	Washington, D. C.	Anes, Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Path., Ped., Phys. Med., Psych., Rad., Surg., Urol.
George Washington University Hospital ★	Washington, D. C.	Anes., Card. Dis., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Path., Phys. Med., Plas. Surg., Psych., Pul. Dis., Rad., Surg., Thor. Surg.
Providence Hospital ★	Washington, D. C.	Anes., Int. Med., Ob.-Gyn., Path., Surg.
St. Elizabeth's Hospital ★	Washington, D. C.	Psych.
Sibley Memorial Hospital ★	Washington, D. C.	Ob.-Gyn., Path., Surg.
Tuberculosis Sanatorium (Glenn Dale, Md.)	Washington, D. C.	Pul. Dis.
Veterans Admin. Hospital	Washington, D. C.	Int. Med., Neur., Ophth., Path., Rad., Surg., Urol.
Washington Hospital Center ★	Washington, D. C.	Anes., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Rad., Surg.
Veterans Admin. Hospital	Coral Gables, Fla.	Int. Med., Path., Phys. Med., Surg.
Halifax District [illegible]	[illegible] Beach, Fla.	Gen'l Pract.
North Broward C [illegible]	[illegible] derdale, Fla.	Path.
University of Flo [illegible]	[illegible] nesville, Fla.	Int. Med., Psych.
Baptist Memorial Hospital ★	Jacksonville, Fla.	Gen'l Pract., Path.
Duval Medical Center ★	Jacksonville, Fla.	Int. Med., Ob.-Gyn., Path., Ped., Psych., Surg., Urol.
Hope Haven Hospital	Jacksonville, Fla.	Ortho. Surg.
Riverside Hospital	Jacksonville, Fla.	Int. Med., Surg.
St. Luke's Hospital ★	Jacksonville, Fla.	Gen'l Pract., Int. Med., Ob.-Gyn., Surg.
St. Vincent's Hospital ★	Jacksonville, Fla.	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Ped., Surg., Urol.
State of Florida	Jacksonville, Fla.	Pub. Health
Southeast Florida Tuberculosis Hospital	Lantana, Fla.	Pul. Dis.
Jackson Memorial Hospital ★	Miami, Fla.	Anes., Card. Dis., Derm., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Pul. Dis., Rad. Surg., Urol.
Variety Children's Hospital	Miami, Fla.	Ortho. Surg., Ped.
Mount Sinai Hospital of Greater Miami ★	Miami Beach, Fla.	Int. Med., Ob.-Gyn., Path., Surg.
St. Francis Hospital ★	Miami Beach, Fla.	Int. Med., Ob.-Gyn., Surg.
Orange Memorial Hospital ★	Orlando, Fla.	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Surg., Urol.
Baptist Hospital	Pensacola, Fla.	Gen'l Pract., Path.
Sacred Heart Hospital ★	Pensacola, Fla.	Gen'l Pract.
U.S. Navy School of Aviation Medicine	Pensacola, Fla.	Aviat. Med.
American Legion Hospital for Crippled Children	St. Petersburg, Fla.	Ortho. Surg.
Mound Park Hospital ★	St. Petersburg, Fla.	Gen'l Pract., Ob.-Gyn., Surg.
Southwest Florida Tuberculosis Hospital	Tampa, Fla.	Pul. Dis.
Tampa General Hospital ★	Tampa, Fla.	Int. Med., Ob.-Gyn., Ortho. Surg., Otol., Surg.
Crawford W. Long Memorial Hospital ★	Atlanta, Ga.	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Georgia Baptist Hospital ★	Atlanta, Ga.	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Surg.
Grady Memorial Hospital ★	Atlanta, Ga.	Int. Med., Neuro. Surg., Ob-Gyn., Ophth., Ortho. Surg., Path., Ped., Rad., Surg., Thor. Surg., Urol.
Henrietta Egleston Hospital for Children	Atlanta, Ga.	Ped.
Piedmont Hospital ★	Atlanta, Ga.	Int. Med., Ob.-Gyn., Rad., Surg.
St. Joseph's Infirmary ★	Atlanta, Ga.	Card. Dis., Int. Med., Ob.-Gyn., Path., Ped., Surg., Urol.
State of Georgia	Atlanta, Ga.	Pub. Health
Veterans Admin. Hospital ★	Atlanta, Ga.	Int. Med., Ophth., Path., Rad., Surg., Urol.
Eugene Talmadge Memorial Hospital ★	Augusta, Ga.	Anes., Int. Med., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Psych., Rad., Surg., Thor. Surg., Urol.
University Hospital ★	Augusta, Ga.	Anes., Int. Med., Neuro. Surg., Ob.-Gyn., Ortho. Surg., Path., Ped., Psych., Rad., Surg., Urol.
Veterans Admin. Hospital	Augusta, Ga.	Int. Med., Neuro. Surg., Psych., Rad., Surg.
The Medical Center ★	Columbus, Ga.	Gen'l Pract.
Scottish Rite Hospital for Crippled Children	Decatur, Ga.	Ortho. Surg.
Emory University Hospital ★	Emory University, Ga.	Anes., Card. Dis., Int. Med., Neuro. Surg., Ortho. Surg., Path., Phys. Med., Rad., Surg., Thor. Surg.
U.S. Army Hospital ★	Fort Benning, Ga.	Surg.
John L. Hutcheson Memorial Tri-County Hospital	Fort Oglethorpe, Ga.	Gen'l Pract.
Macon Hospital ★	Macon, Ga.	Gen'l Pract., Ob-Gyn., Surg.
Memorial Hospita [illegible]	Ga.	Anes., Int. Med., Ob.-Gyn., Path., Surg., Urol.
Georgia Warm S [illegible]	Ga.	Phys. Med.
Kapiolani Matern [illegible]	[illegible] waii	Ob.-Gyn.
Kauikeolani Children's Hospital	Honolulu, Hawaii	Ped.
Leahi Hospital	Honolulu, Hawaii	Pul. Dis., Thor. Surg.
Queen's Hospital ★	Honolulu, Hawaii	Int. Med., Ob.-Gyn., Path., Psych., Surg.
St. Francis Hospital ★	Honolulu, Hawaii	Int. Med., Ob.-Gyn., Path.
Shriners Hospitals for Crippled Children	Honolulu, Hawaii	Ortho. Surg.
Tripler Army Hospital ★	Honolulu, Hawaii	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Rad., Surg., Urol.
Territorial Hospital	Kaneohe, Hawaii	Psych.
MacNeal Memorial Hospital ★	Berwyn, Ill.	Gen'l Pract., Surg.
Alexian Brothers Hospital	Chicago	Path., Surg.
American Hospital ★	Chicago	Path., Surg.
Augustana Hospital ★	Chicago	Int. Med., Obst., Path., Rad., Surg.
Chicago Eye, Ear, Nose and Throat College and Hospital	Chicago	Ophth.
Chicago Maternity Center	Chicago	Obst.
Chicago State Hospital	Chicago	Psych.
Chicago State Tuberculosis Sanitarium	Chicago	Pul. Dis., Thor. Surg.
Chicago Wesley Memorial Hospital ★	Chicago	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Psych., Rad., Surg., Urol.

★ Indicates hospitals approved for training interns.

Name	Location	Approved Residencies
Children's Memorial Hospital	Chicago	Card. Dis., Ortho, Surg., Path., Ped., Rad., Surg., Thor. Surg.
City of Chicago Municipal Tuberculosis Sanitarium	Chicago	Pul. Dis., Thor. Surg.
Columbus Hospital ★	Chicago	Int. Med., Rad.
Cook County Hospital ★	Chicago	Derm., Gastro., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Pul. Dis., Rad., Surg., Urol.
Edgewater Hospital ★	Chicago	Path.
Englewood Hospital ★	Chicago	Obst., Path., Surg.
Frank Cuneo Memorial Hospital	Chicago	Ob.-Gyn.
Grant Hospital ★	Chicago	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Ped., Surg.
Henrotin Hospital	Chicago	Surg.
Hospital of St. Anthony de Padua ★	*Chicago*	*Obst., Surg.*
Illinois Central Hospital ★	Chicago	Int. Med., Surg.
Illinois Eye and Ear Infirmary	Chicago	Ophth., Otol.
Illinois Masonic Hospital ★	Chicago	Anes., Gen'l Pract., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Illinois State Psychiatric Institute	Chicago	Psych.
Lewis Memorial Maternity Hospital	Chicago	Ob.-Gyn.
Loretto Hospital ★	Chicago	Psych.
Louis A. Weiss Memorial	Chicago	Gen'l Pract.
Lutheran Deaconess Home and Hospital ★	Chicago	Obst., Surg.
Mercy Hospital ★	Chicago	Int. Med., Neuro. Surg., Ob.-Gyn., Path., Ped., Psych., Rad., Surg., Urol.
Michael Reese Hospital ★	Chicago	Allergy, Anes., Card. Dis., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Ped. Allergy, Phys. Med., Psych., Pul. Dis., Rad., Surg., Urol.
Mount Sinai Hospital ★	Chicago	Anes., Card. Dis., Int. Med., Ob.-Gyn., Path., Ped., Psych., Rad., Surg., Urol.
Northwestern University Medical Center	Chicago	Allergy, Derm., Neur., Psych., Urol.
Norwegian-American Hospital ★	Chicago	Int. Med., Path., Surg.
Passavant Memorial Hospital ★	Chicago	Anes., Int. Med., Neuro. Surg., Ob.-Gyn., Ophth., Ortho Surg., Path., Rad., Surg., Urol.
Presbyterian-St. Luke's Hospital ★	Chicago	Anes., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Plas. Surg., Psych., Rad., Surg., Urol.
Provident Hospital ★	Chicago	Int. Med., Ob.-Gyn., Ped., Rad., Surg.
Ravenswood Hospital ★	Chicago	Path., Surg.
St. Anne's Hospital ★	Chicago	Obst., Path., Surg.
St. Elizabeth Hospital ★	Chicago	Ob.-Gyn., Ortho. Surg., Surg.
St. Joseph Hospital ★	Chicago	Int. Med., Ob.-Gyn., Path., Surg.
St. Mary of Nazareth Hospital ★	Chicago	Gen'l Pract., Int. Med., Path., Surg.
Shriners Hospitals for Crippled Children	*Chicago*	*Ortho. Surg.*
South Shore Hospital ★	Chicago	Gen'l Pract.
Swedish Covenant Hospital ★	Chicago	Path.
University of Chicago Clinics ★	Chicago	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Urol.
University of Illinois Research and Educational Hospital ★	Chicago	Allergy, Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped. Allergy, Ped., Plas. Surg., Psych., Rad., Surg., Urol.
Veterans Admin. Research Hospital	Chicago	Anes., Gastro., Int. Med., Neur., Neuro. Surg., Ophth., Ortho. Surg., Otol., Path., Phys. Med., Psych., Rad., Surg., Thor. Surg., Urol.
Veterans Admin. (West Side) Hospital	Chicago	Int. Med., Path., Phys. Med., Psych., Rad., Surg.
Woodlawn Hospital ★	Chicago	Surg.
Decatur and Macon County Hospital ★	Decatur, Ill.	Gen'l Pract.
Veterans Admin. Hospital	Downey, Ill.	Psych.
Evanston Hospital ★	Evanston, Ill.	Anes., Int. Med., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Rad., Surg.
St. Francis Hospital ★	Evanston, Ill.	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Rad., Surg.
Little Company of Mary Hospital ★	Evergreen Park, Ill.	Ob.-Gyn., Ped., Rad., Surg.
Galesburg State Research Hospital	Galesburg. Ill.	Psych.
U. S. Naval Hospital ★	Great Lakes, Ill.	Int. Med., Ob.-Gyn., Surg.
Veterans Admin. Hospital	Hines, Ill.	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ophth., Ortho. Surg., Otol., Path., Phys. Med., Plas. Surg., Psych., Rad., Surg., Thor. Surg., Urol.
Suburban Cook County Tuberculosis Hospital and Sanitarium	Hinsdale, Ill.	Thor. Surg.
St. Joseph's Hospital	Joliet, Ill.	Anes.
Community Memorial General Hospital	LaGrange, Ill.	Surg.
Mount Vernon State Tuberculosis Sanitarium	*Mount Vernon, Ill.*	Pul. Dis.
Cook County Tuberculosis Hospital	Oak Forest, Ill.	Pul. Dis.
West Suburban Hospital ★	Oak Park, Ill.	Ob.-Gyn., Ortho. Surg.
Institute of Physical Medicine and Rehabilitation	Peoria, Ill.	Phys. Med.
Methodist Hospital of Central Illinois ★	Peoria, Ill.	Gen'l Pract., Path., Surg.
Peoria Municipal Tuberculosis Sanitarium	Peoria, Ill.	Pul. Dis.
St. Francis Hospital ★	Peoria, Ill.	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Rad., Surg.
Rockford Memorial Hospital ★	Rockford, Ill.	Path., Rad.
St. Anthony's Hospital ★	Rockford, Ill.	Ob.-Gyn., Path., Surg.
State of Illinois	Springfield, Ill.	Pub. Health
Carle Memorial Hospital	Urbana, Ill.	Path., Rad.
North Shore Hospital	Winnetka, Ill.	Psych.
Clinic Hospital	Bluffton, Ind.	Int. Med., Rad., Surg.
St. Joseph's Hospital ★	Fort Wayne, Ind.	Path.
Methodist Hospital ★	Gary, Ind.	Path.
Indiana University Medical Center ★	Indianapolis	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Plas. Surg., Psych., Rad., Surg., Urol.
Marion County General Hospital ★	Indianapolis	Anes., Card. Dis., Derm., Gastro., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Urol.
LaRue D. Carter Memorial Hospital	Indianapolis	Psych.
Methodist Hospital ★	Indianapolis	Gen'l Pract., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Rad., Surg., Urol.
St. Vincent's Hospital ★	Indianapolis	Card. Dis., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Surg.
Veterans Admin. Hospital	Indianapolis	Int. Med., Neuro. Surg., Ortho. Surg., Path., Psych., Rad., Surg., Urol.
St. Elizabeth Hospital ★	Lafayette, Ind.	Int. Med., Ob.-Gyn., Path., Surg.
Logansport State Hospital	Logansport, Ind.	Psych.
Ball Memorial Hospital ★	Muncie, Ind.	Path., Surg.
Healthwin Hospital	*South Bend, Ind.*	*Pul. Dis.*
South Bend Medical Foundation	South Bend, Ind.	Path.
Good Samaritan Hospital	Vincennes, Ind.	Path.
Dr. Norman M. Beatty Memorial Hospital	Westville, Ind.	Psych.
St. Luke's Methodist Hospital ★	Cedar Rapids, Iowa	Path.
Mental Health Institute	Cherokee, Iowa	Psych.
Broadlawns—Polk County Hospital ★	Des Moines, Iowa	Gen'l Pract., Surg.
Iowa Methodist Hospital ★	Des Moines, Iowa	Int. Med., Path., Ped., Rad., Surg.
Mercy Hospital ★	Des Moines, Iowa	Path.
Veterans Admin. Hospital	Des Moines, Iowa	Anes., Int. Med., Ortho. Surg., Path., Rad., Surg., Urol.
Iowa State Psychopathic Hospital	Iowa City, Iowa	Psych.
Mercy Hospital ★	Iowa City, Iowa	Ortho. Surg., Path., Surg.

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Name	Location	Approved Residencies
✓State University of Iowa Hospitals ★	Iowa City, Iowa	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Rad., Surg., Thor. Surg., Urol.
Veterans Admin. Hospital	Iowa City, Iowa	Anes., Int. Med., Neur., Otol., Path., Rad., Surg.
Halstead Hospital	Halstead, Kan.	Path.
St. Margaret's Hospital ★	Kansas City, Kan.	Surg.
✓University of Kansas Medical Center ★	Kansas City, Kan.	Anes., Card. Dis., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Plas. Surg., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
C. F. Menninger Memorial Hospital	Topeka, Kan.	Psych.
State of Kansas	Topeka, Kan.	Pub. Health
Topeka State Hospital	Topeka, Kan.	Psych.
Veterans Admin. Hospital	Topeka, Kan.	Neur., Psych.
Veterans Admin. Hospital	Wadsworth, Kan.	Ortho. Surg.
St. Francis Hospital ★	Wichita, Kan.	Anes., Gen'l Pract., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Rad., Surg.
Veterans Admin. Hospital	Wichita, Kan.	Surg.
Wesley Hospital ★	Wichita, Kan.	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Surg.
Wichita-St. Joseph Hospital ★	Wichita, Kan.	Path.
St. Elizabeth Hospital ★	Covington, Ky.	Path.
Wm. Booth Memorial Hospital	Covington, Ky.	Gen'l Pract.
U. S. Army Hospital	Fort Campbell, Ky.	Surg.
U. S. Army Hospital	Fort Knox, Ky.	Gen'l Pract.
Harlan Memorial Hospital	Harlan, Ky.	Int. Med., Surg.
Central State Hospital	Lakeland, Ky.	Psych.
Central Baptist Hospital	Lexington, Ky.	Gen'l Pract.
Good Samaritan Hospital ★	Lexington, Ky.	Int. Med., Ortho. Surg., Surg.
✓St. Joseph Hospital ★	Lexington, Ky.	Int. Med., Ob.-Gyn., Ortho. Surg., Surg., Urol.
Shriners Hospital for Crippled Children	Lexington, Ky.	Ortho. Surg.
U. S. Public Health Service Hospital	Lexington, Ky.	Psych.
Veterans Admin. Hospital	Lexington, Ky.	Psych.
Children's Hospital	Louisville, Ky.	Anes., Neuro. Surg., Path., Ped., Surg.
Kosair Crippled Children's Hospital	Louisville, Ky.	Ortho. Surg.
✓Louisville General Hospital ★	Louisville, Ky.	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Phych., Rad., Surg., Urol.
Norton Memorial Infirmary ★	Louisville, Ky.	Neuro. Surg., Psych., Surg.
St. Joseph Infirmary ★	Louisville, Ky.	Int. Med., Ob.-Gyn., Ped., Rad., Surg.
SS. Mary and Elizabeth Hospital ★	Louisville, Ky.	Path.
✓Veterans Admin. Hospital	Louisville, Ky.	Int. Med., Neur., Neuro. Surg., Ophth., Ortho. Surg., Otol., Path., Psych., Rad., Surg., Urol.
Waverly Hills Tuberculosis Sanatorium	Waverly Hills, Ky.	Anes., Surg.
Lafayette Charity Hospital	Lafayette, La.	Gen'l Pract., Surg.
St. Patrick's Hospital	Lake Charles, La.	Gen'l Pract.
E. A. Conway Memorial Hospital	Monroe, La.	Gen'l Pract.
✓Charity Hospital of Louisiana ★	New Orleans	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Uro.
Eye, Ear, Nose and Throat Hospital	New Orleans	Ophth., Otol.
Hotel Dieu ★	New Orleans	Path., Ped., Rad., Surg.
✓Ochsner Foundation Hospital ★	New Orleans	Anes., Card. Dis., Gastro., Int. Med., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Path., Proct., Rad., Surg., Urol.
Southern Baptist Hospital ★	New Orleans	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
✓Touro Infirmary ★	New Orleans	Gastro., Gen'l Pract., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Rad., Surg., Urol.
✓U. S. Public Health Service Hospital ★	New Orleans	Int. Med., Ob.-Gyn., Ophth., Path., Rad., Surg.
✓Veterans Admin. Hospital	New Orleans	Anes., Int. Med., Ophth., Ortho. Surg., Path., Psych., Rad., Surg., Urol.
Huey P. Long Charity Hospital	Pineville, La.	Gen'l Pract.
✓Confederate Memorial Medical Center ★	Shreveport, La.	Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Rad., Surg., Thor. Surg., Urol.
Shriners Hospital for Crippled Children	Shreveport, La.	Ortho. Surg.
Eastern Maine General Hospital ★	Bangor, Maine	Anes., Path.
Central Maine Sanatorium	Fairfield, Maine	Pul. Dis.
Central Maine General Hospital ★	Lewiston, Me.	Anes., Int. Med., Path., Ped., Rad., Surg.
Maine Medical Center ★	Portland, Maine	Anes., Card. Dis., Gen'l Pract., Int. Med., Path., Rad., Surg.
Baltimore City Hospitals ★	Baltimore	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ortho. Surg., Path., Ped., Rad., Surg.
Baltimore Eye. Ear and Throat Hospital	Baltimore	Ophth., Otol.
Bon Secours Hospital ★	Baltimore	Gen'l Pract., Ob.-Gyn., Surg.
Children's Hospital	Baltimore	Ortho. Surg.
Church Home and Hospital ★	Baltimore	Int. Med., Obst., Surg.
Franklin Square Hospital ★	Baltimore	Int. Med., Ob.-Gyn., Path., Surg.
Hospital for Women ★	Baltimore	Ob.-Gyn.
James Lawrence Kernan Hospital for Crippled Children	Baltimore	Ortho. Surg.
✓Johns Hopkins Hospital ★	Baltimore	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped. Allergy, Ped., Plas. Surg., Psych., Rad., Surg., Urol.
Lutheran Hospital ★	Baltimore	Int. Med., Ob.-Gyn., Path., Surg.
Maryland General Hospital ★	Baltimore	Int. Med., Ob.-Gyn., Path., Surg.
Mercy Hospital ★	Baltimore	Int. Med., Ob.-Gyn., Otol., Path., Ped., Surg.
Provident Hospital and Free Dispensary ★	Baltimore	Path., Ped., Surg.
St. Agnes Hospital ★	Baltimore	Int. Med., Ob.-Gyn., Surg.
St. Joseph's Hospital ★	Baltimore	Int. Med., Ob.-Gyn., Surg.
Seton Institute	Baltimore	Psych.
✓Sinai Hospital ★	Baltimore	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg., Urol.
South Baltimore General Hospital ★	Baltimore	Int. Med., Obst., Otol., Surg.
State of Maryland	Baltimore	Pub. Health
Union Memorial Hospital ★	Baltimore	Int. Med., Ob.-Gyn., Path., Surg.
[illegible] ice Hospital ★	Baltimore	Int. Med., Ophth., Path., Rad., Surg.
✓[illegible]	Baltimore	Anes., Derm., Gen'l Pract., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Thor. Surg., Urol.
Veterans Admin. Hospital	Baltimore	Pul. Dis., Thor. Surg.
National Institutes of Health—Clinical Center	Bethesda, Md.	Int Med., Neur., Ophth., Path., Psych., Rad.
Suburban Hospital ★	Bethesda, Md.	Gen'l Pract., Path.
✓U. S. Naval Hospital ★	Bethesda, Md.	Anes., Card. Dis., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Urol.
Spring Grove State Hospital	Catonsville, Md.	Psych.
Prince George's General Hospital ★	Cheverly, Md.	Int. Med., Ob.-Gyn., Path., Surg.
Crownsville State Hospital	Crownsville, Md.	Psych.
✓Veterans Admin. Hospital	Fort Howard, Md.	Derm., Int. Med., Ophth., Surg., Urol.
Glenn Dale Hospital	Glenn Dale, Md.	Pul. Dis
Washington County Hospital ★	Hagerstown, Md.	Rad.
Veterans Admin. Hospital	Perry Point, Md.	Int. Med., Psych , Surg.
Chestnut Lodge Sanitarium	Rockville, Md.	Psych.
Springfield State Hospital	Sykesville, Md.	Psych.
Sheppard and Enoch Pratt Hospital	Towson, Md.	Psych.
Veterans Admin. Hospital	Bedford, Mass.	Psych.

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Name	Location	Approved Residencies
McLean Hospital	Belmont, Mass.	Psych.
Beverly Hospital ★	Beverly, Mass.	Int. Med., Path., Surg.
Beth Israel Hospital ★	Boston	Card. Dis., Gastro., Int. Med., Obst., Otol., Path., Psych., Rad., Surg., Urol.
Boston City Hospital ★	Boston	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho Surg., Otol., Path., Ped., Psych., Rad., Surg., Thor. Surg., Urol.
Boston Floating Hospital ★	Boston	Ped.
Boston Lying-In Hospital	Boston	Ob.-Gyn., Path.
Boston Sanatorium	Boston	Pul. Dis., Thor. Surg.
Boston State Hospital	Boston	Psych.
Carney Hospital ★	Boston	Int. Med., Ob.-Gyn., Path., Surg.
Children's Medical Center ★	Boston	Neuro. Surg., Ortho. Surg., Path., Ped., Ped. Allergy, Surg.
Faulkner Hospital	Boston	Int. Med., Path., Rad.
Lahey Clinic	Boston	Anes., Gastro., Int. Med., Ortho. Surg., Rad., Surg.
Lemuel Shattuck Hospital	Boston	Int. Med., Neur., Path., Rad.
Long Island Hospital	Boston	Int. Med.
Massachusetts Eye and Ear Infirmary	Boston	Ophth., Otol.
Massachusetts General Hospital ★	Boston	Allergy, Anes., Derm., Int. Med., Neur., Neuro. Surg., Ortho. Surg., Path., Ped., Ped. Allergy, Phys. Med., Psych., Rad., Surg., Urol.
Massachusetts Memorial Hospitals ★	Boston	Anes., Derm., Gastro., Int. Med., Neur., Ob.-Gyn., Ophth., Path., Psych., Rad., Surg., Urol.
Massachusetts Mental Health Center	Boston	Psych.
New England Center Hospital ★	Boston	Anes., Gyn., Int. Med., Neur., Neuro. Surg., Path., Psych., Rad., Surg., Urol.
New England Deaconess Hospital	Boston	Anes., Int. Med., Path., Rad., Thor. Surg.
New England Hospital ★	Boston	Anes., Gen'l Pract., Obst., Surg.
Peter Bent Brigham Hospital ★	Boston	Anes., Card. Dis., Int. Med., Neuro. Surg., Ortho. Surg., Path., Psych., Rad., Surg., Urol.
St. Elizabeth Hospital ★	Boston	Anes., Int. Med., Ob.-Gyn., Path., Surg.
St. Margaret's Hospital	Boston	Ob.-Gyn.
U. S. Public Health Service Hospital ★	Boston	Int. Med., Surg.
Veterans Admin. Hospital	Boston (Jamaica Plain)	Anes., Int. Med., Neur., Neuro. Surg., Ortho. Surg., Otol., Path., Phys Med., Psych., Rad., Surg., Urol.
Veterans Admin. Hospital	Boston (West Roxbury)	Card. Dis., Path., Rad., Urol.
Brockton Hospital ★	Brockton, Mass.	Surg.
Veterans Admin. Hospital	Brockton, Mass.	Psych.
Free Hospital for Women	Brookline, Mass.	Ob.-Gyn., Path.
Cambridge City Hospital ★	Cambridge, Mass.	Anes., Int. Med., Ob.-Gyn., Path., Rad., Surg.
Cambridge Sanatorium	Cambridge, Mass.	Pul. Dis.
Mount Auburn Hospital ★	Cambridge, Mass.	Anes., Int. Med., Path., Rad., Surg.
Massachusetts Hospital School	Canton, Mass.	Ortho. Surg.
Lawrence F. Quigley Memorial Hospital	Chelsea, Mass.	Int. Med., Surg.
U. S. Naval Hospital ★	Chelsea, Mass.	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Ped., Rad., Surg.
Fall River General Hospital	Fall River, Mass.	Surg.
St. Anne's Hospital	Fall River, Mass.	Gen'l Pract., Ob.-Gyn.
Truesdale Hospital ★	Fall River, Mass.	Path., Surg.
Burbank Hospital	Fitchburg, Mass.	Path., Surg.
Foxborough State Hospital	Foxborough, Mass.	Psych.
Holyoke Hospital ★	Holyoke, Mass.	Anes., Path.
Lawrence General Hospital ★	Lawrence, Mass.	Path.
Lowell General Hospital ★	Lowell, Mass.	Path.
Lynn Hospital ★	Lynn, Mass.	Path., Urol.
Malden Hospital	Malden, Mass.	Int. Med., Path., Surg.
Medfield State Hospital	Medfield, Mass.	Psych.
Lakeville State Sanatorium	Middleboro, Mass.	Ortho. Surg.
St. Luke's Hospital ★	New Bedford, Mass.	Path.
Newton-Wellesley Hospital ★	Newton Lower Falls, Mass.	Int. Med., Path., Surg.
Pittsfield General Hospital	Pittsfield, Mass.	Path.
Quincy City Hospital ★	Quincy, Mass.	Int Med., Path., Surg.
Veterans Admin. Hospital	Rutland Heights, Mass.	Pul. Dis.
Salem Hospital ★	Salem, Mass.	Int. Med., Path.
Shriners Hospital for Crippled Children	Springfield, Mass.	Ortho. Surg.
Springfield Hospital ★	Springfield, Mass.	Anes., Int. Med., Path., Ped., Surg.
Wesson Maternity Hospital	Springfield, Mass.	Obst.
Austen Riggs Center	Stockbridge, Mass.	Psych.
Taunton State Hospital	Taunton, Mass.	Psych.
Pondville Hospital	Walpole, Mass.	Int. Med., Path., Surg.
Metropolitan State Hospital	Waltham, Mass.	Psych.
Middlesex County Sanatorium	Waltham, Mass.	Pul. Dis.
Westborough State Hospital	Westborough, Mass.	Psych.
Westfield State Sanatorium	Westfield, Mass.	Pul. Dis., Surg.
Memorial Hospital ★	Worcester, Mass.	Int. Med., Path., Surg.
St. Vincent Hospital ★	Worcester, Mass.	Anes., Int. Med., Path., Ped., Surg.
Worcester City Hospital ★	Worcester, Mass.	Gen'l Pract., Int. Med., Ortho. Surg., Path., Ped., Surg.
Worcester County Sanatorium	Worcester, Mass.	Pul. Dis.
Worcester State Hospital	Worcester, Mass.	Psych.
St. Joseph Mercy Hospital ★	Ann Arbor, Mich.	Int. Med., Ob.-Gyn., Path., Plas. Surg., Rad., Surg.
University Hospital ★	Ann Arbor, Mich.	Allergy, Anes., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Psych., Rad., Surg., Thor. Surg., Urol.
Leila Y. Post Montgomery Hospital ★	Battle Creek, Mich.	Path., Rad., Surg.
Oakwood Hospital ★	Dearborn, Mich.	Gen'l. Pract., Ob.-Gyn., Path.
Veterans Admin. Hospital	Dearborn, Mich.	Int. Med., Neur., Ophth., Ortho. Surg., Path., Rad., Surg.
Alexander Blain Hospital	Detroit	Int. Med., Surg.
Brent General Hospital	Detroit	Gen'l Pract.
Children's Hospital	Detroit	Ortho. Surg., Path., Ped., Psych.
Crittenton General Hospital	Detroit	Ob.-Gyn.
Detroit Memorial Hospital ★	Detroit	Int. Med., Ob.-Gyn., Path., Rad., Surg.
Evangelical Deaconess Hospital ★	Detroit	Gen'l Pract., Int. Med., Ob.-Gyn., Surg.
Grace Hospital ★	Detroit	Int. Med., Neuro. Surg., Ob.-Gyn., Path., Rad., Surg., Urol.
Harper Hospital ★	Detroit	Anes., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Rad., Surg., Urol.
Henry Ford Hospital ★	Detroit	Anes., Card. Dis., Derm., Gastro., Gen'l Pract., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Plas. Surg., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Herman Kiefer Hospital	Detroit	Ob.-Gyn., Path., Pul. Dis., Rad., Thor. Surg.
Jennings Memorial Hospital	Detroit	Int. Med., Surg.
Lafayette Clinic	Detroit	Neur., Psych.
Mount Carmel Mercy Hospital ★	Detroit	Int. Med., Ob.-Gyn., Path., Rad., Surg.
North Detroit General Hospital	Detroit	Gen'l Pract.
Providence Hospital ★	Detroit	Anes., Int. Med., Ob.-Gyn., Path., Rad., Surg.
Receiving Hospital ★	Detroit	Anes., Derm., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Urol.
St. John Hospital ★	Detroit	Int. Med., Ob.-Gyn., Surg.

★ Indicates hospitals approved for training interns.

Name	Location	Approved Residencies
St. Joseph Mercy Hospital ★	Detroit	Int. Med., Ob.-Gyn., Surg.
Sinai Hospital ★	Detroit	Anes., Int. Med., Ob.-Gyn., Path., Rad., Surg.
U. S. Public Health Service Hospital	Detroit	Gen'l Pract.
Woman's Hospital ★	Detroit	Int. Med., Ob.-Gyn., Path., Surg.
Wayne County General Hospital and Infirmary ★	Eloise, Mich.	Int. Med., Path., Psych., Rad., Surg., Urol.
Hurley Hospital ★	Flint, Mich.	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
McLaren General Hospital ★	Flint, Mich.	Gen'l Pract., Int. Med., Path., Rad., Surg.
St. Joseph Hospital ★	Flint, Mich.	Gen'l Pract., Path., Rad.
Blodgett Memorial Hospital ★	Grand Rapids, Mich.	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Rad., Surg.
Butterworth Hospital ★	Grand Rapids, Mich.	Anes.; Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Ferguson-Droste-Ferguson Hospital	Grand Rapids, Mich.	Proct.
St. Mary's Hospital ★	Grand Rapids, Mich.	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Surg.
Bon Secours Hospital ★	Grosse Pointe, Mich.	Int. Med., Surg.
Highland Park General Hospital ★	Highland Park, Mich.	Int. Med., Ob.-Gyn., Surg.
Michigan State Sanatorium	Howell, Mich.	Pul. Dis.
W. A. Foote Memorial Hospital	Jackson, Mich.	Path.
Borgess Hospital ★	Kalamazoo, Mich.	Gen'l Pract., Ob.-Gyn., Ortho. Surg., Path., Surg.
Bronson Methodist Hospital ★	Kalamazoo, Mich.	Int. Med., Surg.
Edward W. Sparrow Hospital ★	Lansing, Mich.	Int. Med., Path., Surg.
Ingham Chest Hospital	Lansing, Mich.	Thor. Surg.
St. Lawrence Hospital ★	Lansing. Mich.	Int. Med.
State of Michigan	Lansing, Mich.	Pub. Health
Lynn Hospital	Lincoln Park, Mich.	Gen'l Pract.
Hawthorne Center	Northville, Mich.	Psych.
Northville State Hospital	Northville, Mich.	Psych.
Wm. H. Maybury Sanatorium	Northville, Mich.	Pul. Dis.
Pontiac General Hospital ★	Pontiac, Mich.	Int. Med., Ob.-Gyn., Path., Surg.
Pontiac State Hospital	Pontiac, Mich.	Psych.
St. Joseph Mercy Hospital ★	Pontiac, Mich.	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
William Beaumont Hospital ★	Royal Oak, Mich.	Int. Med., Ob.-Gyn., Surg.
Saginaw General Hospital ★	Saginaw, Mich.	Int. Med., Ob.-Gyn., Path., Ped., Surg.
St. Mary's Hospital ★	Saginaw, Mich.	Gen'l Pract.
Traverse City State Hospital	Traverse City, Mich.	Psych.
Wyandotte General Hospital	Wyandotte, Mich.	Gen'l Pract.
Ypsilanti State Hospital	Ypsilanti, Mich.	Psych.
St. Luke's Hospital ★	Duluth, Minn.	Path.
St. Mary's Hospital ★	Duluth, Minn.	Path.
Asbury Methodist Hospital ★	Minneapolis	Int. Med.
Elizabeth Kenny Institute	Minneapolis	Phys. Med.
Fairview Hospital	Minneapolis	Gen'l Pract.
Lutheran Deaconess Home and Hospital	Minneapolis	Gen'l Pract.
Minneapolis General Hospital ★	Minneapolis	Derm., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Surg., Urol.
Mount Sinai Hospital ★	Minneapolis	Surg.
Northwestern Hospital ★	Minneapolis	Int. Med., Ob.-Gyn., Path., Ped., Surg.
St. Barnabas Hospital ★	Minneapolis	Int. Med., Ob.-Gyn., Path., Surg.
St. Mary's Hospital ★	Minneapolis	Ob.-Gyn., Urol.
Shriners Hospital for Crippled Children	Minneapolis	Ortho. Surg.
State of Minnesota	Minneapolis	Pub. Health
Swedish Hospital ★	Minneapolis	Ob.-Gyn., Path., Rad., Surg.
University of Minnesota Hospitals ★	Minneapolis	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Proct., Psych., Rad., Surg., Urol.
Veterans Admin. Hospital	Minneapolis	Derm., Int. Med., Neur., Neuro. Surg., Ophth., Ortho. Surg., Otol., Path., Phys. Med., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Nopeming Sanatorium	Nopeming, Minn.	Pul. Dis.
Glen Lake Sanatorium	Oak Terrace, Minn.	Pul. Dis
Mayo Foundation	Rochester, Minn.	Allergy, Anes., Card. Dis., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped. Allergy, Ped., Phys. Med., Plas. Surg., Proct., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Ancker Hospital ★	St. Paul, Minn.	Derm., Int. Med., Ob.-Gyn., Ophth., Otol., Path., Surg., Urol.
Charles T. Miller Hospital ★	St. Paul, Minn.	Int. Med., Ob.-Gyn., Ophth., Path., Rad., Surg., Urol.
Gillette State Hospital for Crippled Children	St. Paul, Minn.	Ortho Surg.
Midway Hospital	St. Paul, Minn.	Gen'l Pract.
St. Joseph's Hospital ★	St. Paul, Minn.	Ob.-Gyn., Path., Surg.
St. Luke's Hospital ★	St. Paul, Minn.	Gen'l Pract.
U. S. Air Force Hospital	Biloxi, Miss.	Gen'l Pract.
Veterans Admin. Hospital	Biloxi, Miss.	Psych.
[illegible] ★	Jackson, Miss.	Gen'l Pract., Ortho Surg., Path.
[illegible]	Jackson, Miss.	Pub. Health
[illegible]	Jackson, Miss.	Gen'l Pract., Int. Med., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Plas. Surg., Psych., Rad., Surg., Thor. Surg., Urol.
Veterans Admin. Hospital	Jackson, Miss.	Neuro. Surg., Ophth., Ortho. Surg., Plas. Surg., Surg., Urol.
Mississippi State Tuberculosis Sanatorium	Sanatorium, Miss.	Pul. Dis., Thor. Surg.
Mercy Hospital-Street Memorial ★	Vicksburg, Miss.	Gen'l Pract., Surg.
Vicksburg Hospital	Vicksburg, Miss.	Surg.
Mississippi State Hospital	Whitfield, Miss.	Psych.
St. Louis County Hospital ★	Clayton, Mo.	Int. Med., Ob.-Gyn., Path., Surg.
Ellis Fischel Cancer Hospital	Columbia, Mo.	Surg.
University Hospitals ★	Columbia, Mo.	Anes., Gen'l Pract., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Rad., Surg.
Children's Mercy Hospital ★	Kansas City, Mo.	Ortho. Surg., Ped.
Kansas City General Hospital ★	Kansas City, Mo.	Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Plas. Surg., Psych., Surg., Urol.
Menorah Medical Center ★	Kansas City, Mo.	Gen'l Pract., Int. Med., Path., Rad., Surg.
Research Hospital ★	Kansas City, Mo.	Path., Rad.
St. Joseph Hospital ★	Kansas City, Mo.	Int. Med., Ob.-Gyn., Path., Rad., Surg.
St. Luke's Hospital ★	Kansas City, Mo.	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Rad., Surg.
St. Mary's Hospital ★	Kansas City, Mo.	Path., Surg.
Veterans Admin. Hospital	Kansas City, Mo.	Int., Med., Neur., Ortho. Surg., Otol., Path., Phys. Med., Pul. Dis., Rad., Surg., Urol.
Robert Koch Hospital	Koch, Mo.	Pul. Dis.
Missouri State Sanatorium	Mount Vernon, Mo.	Pul. Dis., Thor. Surg.
Missouri Methodist Hospital ★	St. Joseph, Mo.	Gen'l Pract., Surg.
Barnes Hospital ★	St. Louis	Allergy, Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Plas. Surg., Psych., Rad., Surg., Thor. Surg., Urol.
De Paul Hospital ★	St. Louis	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Rad., Surg.
Homer G. Phillips Hospital ★	St. Louis	Int. Med., Ob.-Gyn., Ophth., Otol., Path., Ped., Psych., Rad., Surg., Urol.
Jewish Hospital ★	St. Louis	Anes., Int. Med., Ob.-Gyn., Path , Rad., Surg.
Lutheran Hospital ★	St. Louis	Gen'l Pract.
Missouri Baptist Hospital ★	St. Louis	Int. Med., Path., Surg.
Missouri Pacific Hospital	St. Louis	Int. Med., Surg., Urol.

★ Indicates hospitals approved for training interns.

Name	Location	Approved Residencies
St. Anthony's Hospital ★	St. Louis	Gen'l Pract., Surg.
St. John's Hospital ★	St. Louis	Anes., Int. Med., Obst., Path., Surg.
St. Louis Children's Hospital ★	St. Louis	Ped.
✓St. Louis City Hospital ★	St. Louis	Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Urol.
St. Louis State Hospital	*St. Louis*	*Psych.*
St. Luke's Hospital ★	St. Louis	Int. Med., Ob.-Gyn., Path., Surg.
✓St. Mary's Group of Hospitals ★	St. Louis	Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Plas. Surg., Psych., Pul. Dis., Rad., Surg., Urol.
Shriners Hospital for Crippled Children	St. Louis	Ortho. Surg.
✓Veterans Admin. Hospital	St. Louis	Anes., Int. Med., Ophth., Ortho. Surg., Path., Psych., Rad., Surg., Urol.
St. John's Hospital	Springfield, Mo.	Anes.
Hastings State Hospital	Ingleside, Neb.	Psych.
Lincoln General Hospital ★	Lincoln, Neb.	Ob.-Gyn., Path.
Nebraska Orthopedic Hospital	Lincoln, Neb.	Ortho. Surg.
St. Elizabeth's Hospital ★	Lincoln, Neb.	Ob.-Gyn., Surg.
Veterans Admin. Hospital	Lincoln, Neb.	Int. Med., Ortho. Surg., Surg.
Bishop Clarkson Memorial Hospital ★	Omaha	Path.
Children's Memorial Hospital ★	Omaha	Ped.
Creighton Memorial-St. Joseph Hospital ★	Omaha	Int. Med., Ob.-Gyn., Path., Ped., Psych., Rad., Surg.
Immanuel Hospital ★	Omaha	Gen'l Pract., Ob.-Gyn., Path.
Nebraska Methodist Hospital ★	Omaha	Path., Rad.
University of Nebraska Hospital ★	Omaha	Anes., Card. Dis., Int. Med., Ob.-Gyn., Ophth., Path., Ped., Psych., Rad., Surg.
Veterans Admin. Hospital	Omaha	Int. Med., Neur., Path., Psych., Rad., Surg.
New Hampshire State Hospital	Concord, N. H.	Psych.
✓Mary Hitchcock Memorial Hospital ★	Hanover, N. H.	Anes., Derm., Int. Med., Neuro. Surg., Ortho. Surg., Path., Ped., Phys. Med., Rad., Surg., Urol.
Atlantic City Hospital ★	Atlantic City, N. J.	Int. Med., Path., Surg.
Bayonne Hospital and Dispensary ★	Bayonne, N. J.	Urol.
Cooper Hospital ★	Camden, N. J.	Int. Med., Ob.-Gyn., Path., Ped., Plas. Surg., Surg.
Our Lady of Lourdes Hospital ★	Camden, N. J.	Path., Rad.
West Jersey Hospital ★	*Camden, N. J.*	*Anes., Path., Surg.*
Essex County Overbrook Hospital	Cedar Grove, N. J.	Psych.
✓East Orange General Hospital ★	East Orange, N. J.	Path.
✓Veterans Admin. Hospital	East Orange, N. J.	Int. Med., Neur., Otol., Path., Phys. Med., Pul. Dis., Rad., Surg., Urol.
Englewood Hospital ★	Englewood, N. J.	Path.
Hunterdon Medical Center	Flemington, N. J.	Gen'l Pract., Path.
U. S. Army Fort Dix Health Center	Fort Dix, N. J.	Pub. Health
New Jersey Sanatorium for Chest Diseases	Glen Gardner, N. J.	Pul. Dis.
New Jersey State Hospital	Greystone Park, N. J.	Psych.
✓Hackensack Hospital ★	Hackensack, N. J.	Anes., Int. Med., Obst., Path., Rad., Surg., Urol.
New Jersey State Hospital at Ancora	Hammonton, N. J.	Psych.
St. Mary's Hospital ★	Hoboken, N. J.	Path.
B. S. Pollak Hospital for Chest Diseases	Jersey City, N. J.	Pul. Dis., Thor. Surg.
Christ Hospital ★	Jersey City, N. J.	Path.
✓Jersey City Hospital ★	Jersey City, N. J.	Anes., Gyn., Int. Med., Ophth., Path., Ped., Rad., Surg., Urol.
Margaret Hague Maternity Hospital	Jersey City, N. J.	Obst.
Monmouth Medical Center ★	Long Branch, N. J.	Obst., Ortho. Surg., Path., Surg
Veterans Admin. Hospital	Lyons, N. J	Psych.
New Jersey State Hospital	Marlboro, N. J.	Psych.
Mountainside Hospital ★	Montclair, N. J.	Gen'l Pract., Int. Med., Path., Surg.
Morristown Memorial Hospital ★	Morristown, N. J.	Path., Rad., Surg.
Burlington County Hospital	Mount Holly, N. J.	Int. Med., Ob.-Gyn., Path., Surg.
Fitkin Memorial Hospital ★	Neptune, N. J.	Int. Med., Path., Ped., Surg.
Babies Hospital	Newark, N. J.	Ped.
✓Harrison S. Martland Medical Center ★	Newark, N. J.	Ob.-Gyn., Otol., Path., Surg., Urol.
Hospital for Crippled Children	Newark, N. J.	Ortho. Surg.
Newark Beth Israel Hospital ★	Newark, N. J.	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Newark Eye and Ear Infirmary	*Newark, N. J.*	*Ophth., Otol.*
Presbyterian Hospital ★	Newark, N. J.	Path., Surg.
St. Barnabas Medical Center ★	Newark, N. J.	Path., Plas. Surg.
St. Michael's Hospital ★	Newark, N. J.	Int. Med., Ob.-Gyn., Path., Ped., Surg.
Middlesex General Hospital ★	New Brunswick, N. J.	Path.
St. Peter's General Hospital ★	New Brunswick, N. J.	Int. Med., Path., Surg.
New Jersey Orthopaedic Hospital and Dispensary	Orange, N. J.	Ortho. Surg.
Orange Memorial Hospital ★	Orange, N. J.	Ortho. Surg., Path., Surg.
Bergen Pines County Hospital ★	Paramus, N. J.	Card. Dis., Int. Med., Path., Psych., Pul. Dis.
Passaic General Hospital ★	Passaic, N. J.	Ob.-Gyn., Path., Ped.
St. Mary's Hospital ★	Passaic, N. J.	Path.
Barnert Memorial Hospital ★	Paterson, N. J.	Path.
Paterson General Hospital ★	Paterson, N. J.	Obst., Path.
St. Joseph Hospital ★	Paterson, N. J.	Anes., Ortho. Surg., Path.
Perth Amboy General Hospital ★	Perth Amboy, N. J.	Path.
Princeton [illegible]	[illegible] N. J.	Gen'l Pract.
New Jersey [illegible]	N. J.	Psych.
Somerset H[illegible]	N. J.	Gen'l Pract.
Overlook Hospital ★	Summit, N. J.	Gen'l Pract., Path.
Holy Name Hospital ★	Teaneck, N. J.	Obst.
Mercer Hospital ★	Trenton, N. J.	Path.
New Jersey State Hospital	Trenton, N. J.	Psych.
St. Francis Hospital ★	Trenton, N. J.	Int. Med., Ob.-Gyn., Path., Ped., Surg.
Essex Cour[illegible]	[illegible]na, N. J.	Pul. Dis.
Bataan Me[illegible]	N. Mex.	Int. Med., Path., Rad.
Bernalillo [illegible]	N. Mex.	Int. Med., Ob.-Gyn., Path., Ped., Surg.
Veterans Admin. Hospital	Albuquerque, N. Mex.	Int. Med., Path., Pul. Dis., Surg.
Los Alamos Medical Center	Los Alamos, N. Mex.	Gen'l Pract.
Carrie Tingley Hospital for Crippled Children	Truth Or Consequences, N. Mex.	Ortho. Surg.
✓Albany Hospital ★	Albany, N. Y.	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ortho. Surg., Otol., Path., Ped., Plas. Surg., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Anthony N. Brady Hospital	Albany, N. Y.	Obst.
Bender Hygienic Laboratory	Albany, N. Y.	Path.
St. Peter's Hospital ★	Albany, N. Y.	Ped., Surg
State of New York	Albany, N. Y.	Pub. Health
Veterans Admin. Hospital	Albany, N. Y.	Int. Med., Neur., Path., Phys. Med., Psych., Rad., Surg.
River Cres[illegible]	[illegible] N. Y.	Psych.
Binghamto[illegible]	N. Y.	Int. Med., Path.
Binghamto[illegible]	N. Y.	Psych.
Lawrence [illegible]	N. Y.	Path.
Beth El Hospital ★	Brooklyn	Anes., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Brooklyn Eye and Ear Hospital	Brooklyn	Ophth., Otol.
Brooklyn Hospital ★	Brooklyn	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.

★ Indicates hospitals approved for training interns.

Name	Location	Approved Residencies
Brooklyn State Hospital	Brooklyn	Psych.
Brooklyn Women's Hospital	Brooklyn	Ob.-Gyn.
Coney Island Hospital ★	Brooklyn	Int. Med., Ob.-Gyn., Path., Ped., Phys. Med., Surg.
Cumberland Hospital ★	Brooklyn	Ob.-Gyn., Path., Ped., Rad., Surg.
Greenpoint Hospital ★	Brooklyn	Ob.-Gyn., Path., Surg.
House of St. Giles The Cripple	Brooklyn	Ortho. Surg.
Jewish Chronic Disease Hospital	Brooklyn	Int. Med., Neur., Ortho. Surg., Path., Phys. Med.
Jewish Hospital ★	Brooklyn	Allergy, Anes., Card. Dis., Gastro., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Rad., Surg., Urol.
Kings County Hospital Center ★	Brooklyn	Anes., Derm., Gastro., Int. Med., Neur., Neur. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Plas. Surg., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Long Island College Hospital ★	Brooklyn	Int. Med., Neuro. Surg., Ob.-Gyn., Otol., Path., Ped., Rad., Surg., Urol.
Lutheran Medical Center ★	Brooklyn	Int. Med., Ob.-Gyn., Path., Ped., Surg.
Maimonides Hospital ★	Brooklyn	Anes., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg., Thor. Surg., Urol.
Methodist Hospital ★	Brooklyn	Anes., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
St. Catherine's Hospital ★	Brooklyn	Anes., Int. Med., Ob.-Gyn., Path., Ped., Surg.
St. Charles Hospital Orthopedic Clinic	Brooklyn	Ortho. Surg.
St. John's Episcopal Hospital ★	Brooklyn	Int. Med., Ob.-Gyn., Path., Ped., Surg.
St. Mary's Hospital ★	Brooklyn	Int. Med., Ob.-Gyn., Path., Ped., Surg.
Unity Hospital ★	Brooklyn	Ob.-Gyn.
Veterans Admin. Hospital	Brooklyn	Anes., Gastro., Int. Med., Ophth., Ortho. Surg., Path., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Wyckoff Heights Hospital ★	Brooklyn	Ob.-Gyn., Path., Ped., Surg.
Allied Hospitals of Sisters of Charity ★	Buffalo	Ob.-Gyn., Path., Surg.
Buffalo General Hospital ★	Buffalo	Allergy, Anes., Card. Dis., Int. Med., Neur., Neur. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Proct., Rad., Surg., Thor. Surg., Urol.
Buffalo State Hospital	Buffalo	Psych.
Children's Hospital ★	Buffalo	Ortho. Surg., Ped. Allergy, Ped., Surg.
Deaconess Hospital ★	Buffalo	Int. Med., Ob.-Gyn., Path., Rad., Surg.
Edward J. Meyer Memorial Hospital ★	Buffalo	Anes., Derm., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Emergency Hospital of The Sisters of Charity	Buffalo	Int. Med., Surg.
Mercy Hospital ★	Buffalo	Gen'l Pract.
Millard Fillmore Hospital ★	Buffalo	Anes., Gen'l Pract., Int. Med., Ob.-Gyn., Path., Proct., Rad., Surg., Urol.
Roswell Park Memorial Institute	Buffalo	Derm., Int. Med., Path., Rad., Surg.
Veterans Admin. Hospital	Buffalo	Anes., Int. Med., Ortho. Surg., Path., Rad., Surg., Thor. Surg.
Veterans Admin. Hospital	Canandaigua, N. Y.	Psych.
Veterans Admin. Hospital	Castle Point, N. Y.	Thor. Surg.
Central Islip State Hospital	Central Islip, N. Y.	Psych.
Clifton Springs Sanitarium and Clinic	Clifton Springs, N. Y.	Int. Med., Surg.
Mary Imogene Bassett Hospital ★	Cooperstown, N. Y.	Int. Med., Ob.-Gyn., Path., Ped., Surg.
City Hospital at Elmhurst ★	Elmhurst, N. Y.	Int. Med., Ob.-Gyn., Ophth., Otol., Path., Ped., Pul. Dis., Rad., Surg., Urol.
Arnot-Ogden Memorial Hospital ★	Elmira, N. Y.	Path.
St. Joseph's Hospital ★	Elmira, N. Y.	Path.
Nassau County Tuberculosis Hospital	Farmingdale, N. Y.	Pul. Dis.
St. Joseph Hospital	Far Rockaway, N. Y.	Anes.
Flushing Hospital and Dispensary ★	Flushing, N. Y.	Anes., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
	Cove, N. Y.	Gen'l Pract., Path.
	Oaks, N. Y.	Psych.
	Falls, N. Y.	Path.
Headquarters, First U. S. Army	Governors Island, N. Y.	Pub. Health
St. Vincent's Hospital	Harrison, N. Y.	Psych.
Gowanda State Homeopathic Hospital	Helmuth, N. Y.	Psych.
Meadowbrook Hospital ★	Hempstead, N. Y.	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Plas. Surg., Psych., Rad., Surg., Urol.
Irvington House	Irvington, N. Y.	Card. Dis.
Cornell University Infirmary	Ithaca, N. Y.	Int. Med.
Jamaica Hospital ★	Jamaica, N. Y.	Int. Med., Ob.-Gyn., Surg.
Mary Immaculate Hospital ★	Jamaica, N. Y.	Obst., Path., Ped., Surg.
Queens General Hospital ★	Jamaica, N. Y.	Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Rad., Surg.
Triboro Hospital	Jamaica, N. Y.	Pul. Dis., Thor. Surg.
Charles S. Wilson Memorial Hospital ★	Johnson City, N. Y.	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Kew Gardens General Hospital	Kew Gardens, N. Y.	Path.
Kings Park State Hospital	Kings Park, N. Y.	Psych.
Ulster County Tuberculosis Hospital	Kingston, N. Y.	Path., Pul. Dis.
Mount View Hospital	Lockport, N. Y.	Pul. Dis.
St. John's Long Island City Hospital ★	Long Island City, N. Y.	Path.
North Shore Hospital	Manhasset, N. Y.	Int. Med., Ob.-Gyn., Path., Ped., Surg.
Marcy State Hospital	Marcy, N. Y.	Psych.
Middletown State Homeopathic Hospital	Middletown, N. Y.	Psych.
Nassau Hospital ★	Mineola, N. Y.	Ob.-Gyn., Ortho. Surg., Path., Surg.
Veterans Admin. Hospital	Montrose, N. Y.	Psych.
Mount Morris Tuberculosis Hospital	Mt. Morris, N. Y.	Pul. Dis., Thor. Surg.
Mount Vernon Hospital ★	Mount Vernon, N. Y.	Int. Med., Ob.-Gyn., Path., Surg.
St. Luke's Hospital ★	Newburgh, N. Y.	Path.
Long Island Jewish Hospital ★	New Hyde Park, L. I., N. Y.	Anes., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
New Rochelle Hospital ★	New Rochelle, N. Y.	Int. Med., Path., Surg.
Babies Hospital	New York City	Surg.
Beekman-Downtown Hospital	New York City	Int. Med., Surg.
Bellevue Hospital Center		
Div. I—Columbia University ★	New York City	Int. Med., Pul. Dis., Surg., Thor. Surg.
Div. II—Cornell University ★	New York City	Int. Med., Neur., Neuro. Surg., Surg., Urol.
Div. III—New York University College of Medicine ★	New York City	Int. Med., Neur., Ob.-Gyn., Path., Ped., Phys. Med., Psych., Rad., Surg.
Div. IV—New York University Post Graduate Medical School ★	New York City	Anes., Derm., Int. Med., Neuro. Surg., Ophth., Ortho. Surg., Otol., Surg., Urol.
Beth Israel Hospital ★	New York City	Anes., Int. Med., Neuro. Surg., Ob.-Gyn., Path., Ped., Plas. Surg., Rad., Surg., Urol.
Bird S. Coler Memorial Hospital and Home	New York City	Int. Med., Phys. Med., Rad.
Bronx Hospital ★	New York City	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Bronx Municipal Hospital Center ★	New York City	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Phys. Med., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
City of New York	New York City	Pub. Health
Columbus Hospital	New York City	Int. Med., Surg.
Flower and Fifth Avenue Hospitals	New York City	Anes., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Fordham Hospital ★	New York City	Int. Med., Neur., Ob.-Gyn., Path., Ped., Surg., Urol.
Francis Delafield Hospital	New York City	Gyn., Int. Med., Path., Plas. Surg., Rad., Surg., Urol.
French Hospital ★	New York City	Int. Med., Ob.-Gyn., Surg., Urol.

★ Indicates hospitals approved for training interns.

Name	Location	Approved Residencies
Goldwater Memorial Hospital		
Columbia University Division	New York City	Int. Med.
Open Division	New York City	Path., Phys. Med., Surg.
Third New York University Research Unit	New York City	Int. Med., Neur.
Grand Central Hospital ★	New York City	Int. Med., Ob.-Gyn., Surg.
Harlem Eye and Ear Hospital	New York City	Ophth., Otol.
Harlem Hospital ★	New York City	Int. Med., Ob.-Gyn., Path., Ped., Surg.
Hospital for Joint Diseases ★	New York City	Anes., Gyn., Int. Med., Ortho. Surg., Path., Phys. Med., Rad., Surg.
Hospital for Special Surgery	New York City	Ortho. Surg.
Jewish Memorial Hospital ★	New York City	Ob.-Gyn., Path., Surg.
Knickerbocker Hospital ★	New York City	Gyn., Int. Med., Path., Surg.
Lebanon Hospital ★	New York City	Int. Med., Path., Rad., Surg.
Lenox Hill Hospital ★	New York City	Anes., Card. Dis., Int. Med., Neur., Ob.-Gyn., Ophth., Path., Ped., Psych., Rad., Surg.
Lincoln Hospital ★	New York City	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg., Urol.
Manhattan Eye, Ear and Throat Hospital	New York City	Ophth., Otol.
Manhattan State Hospital	New York City	Psych.
Memorial Center for Cancer and Allied Diseases	New York City	Anes., Card. Dis., Int. Med., Path., Rad., Surg.
Metropolitan Hospital	New York City	Anes., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Phys. Med., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Misericordia Hospital ★	New York City	Int. Med., Obst., Ped., Surg.
Montefiore Hospital ★	New York City	Anes., Int. Med., Neur., Neuro. Surg., Ophth., Path., Phys. Med., Pul. Dis., Rad., Surg., Thor. Surg.
Morrisania City Hospital ★	New York City	Int. Med., Ob.-Gyn., Path., Ped., Pul. Dis., Rad., Surg., Urol.
Mother Cabrini Memorial Hospital ★	New York City	Surg.
Mount Sinai Hospital ★	New York City	Anes., Card., Dis., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Plas. Surg., Psych., Rad., Surg., Urol.
New York Eye and Ear Infirmary	New York City	Ophth., Otol.
New York Hospital ★	New York City	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Otol., Path., Ped., Plas. Surg., Psych., Rad., Surg., Urol.
New York Infirmary ★	New York City	Int. Med., Ob.-Gyn., Ped., Surg.
New York Polyclinic Medical School and Hospital ★	New York City	Anes., Derm., Gastro., Ob.-Gyn., Ophth., Ortho., Surg., Otol., Path., Ped., Rad., Surg., Urol.
New York State Psychiatric Institute	New York City	Psych.
New York University—Bellevue Medical Center		
University Hospital	New York City	Derm., Gyn., Int. Med., Path., Psych., Rad.
Presbyterian Hospital ★	New York City	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Plas. Surg., Psych., Rad., Surg., Urol.
Roosevelt Hospital ★	New York City	Allergy, Gyn., Int. Med., Otol., Path., Ped. Allergy, Ped., Psych., Rad., Surg., Urol.
St. Barnabas Hospital for Chronic Diseases	New York City	Int. Med., Path.
St. Clare's Hospital ★	New York City	Anes., Int. Med., Ob.-Gyn., Path., Surg., Urol.
St. Francis Hospital ★	New York City	Ob.-Gyn., Path.
St. Joseph Hospital for Chest Diseases	New York City	Pul. Dis., Thor. Surg.
St. Luke's Hospital ★	New York City	Anes., Card. Dis., Derm., Int. Med., Ophth., Ortho. Surg., Otol., Path., Ped., Plas. Surg., Psych., Rad., Surg., Urol.
St. Vincent's Hospital ★	New York City	Anes., Int. Med., Neuro. Surg., Ob.-Gyn., Ophth., Path., Ped., Phys. Med., Psych., Rad., Surg.
Sydenham Hospital ★	New York City	Int. Med., OB.-Gyn., Surg.
Veterans Admin. Hospital (Bronx)	New York City	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ophth., Ortho. Surg., Otol., Path., Phys. Med., Plas. Surg., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Veterans Admin. Hospital (Manhattan)	New York City	Derm., Int. Med., Neur., Ortho. Surg., Path., Phys. Med., Psych., Rad., Surg., Thor. Surg., Urol.
Woman's Hospital	New York City	Ob.-Gyn.
Veterans Admin. Hospital	Northport, N. Y.	Psych.
St. Lawrence State Hospital	Ogdensburg, N. Y.	Psych.
Homer Folks Tuberculosis Hospital	Oneonta, N. Y.	Pul. Dis., Thor. Surg.
Rockland State Hospital	Orangeburg, N. Y.	Psych.
J. N. Adam Memorial Hospital	Perrysburg, N. Y.	Pul. Dis.
High Point Hospital	Port Chester, N. Y.	Psych.
United Hospital ★	Port Chester, N. Y.	Int. Med., Obst., Path., Surg.
St. Charles Hospital	Port Jefferson, N. Y.	Ortho. Surg.
Hudson River State Hospital	Poughkeepsie, N. Y.	Psych.
Vasser Brothers Hospital ★	Poughkeepsie, N. Y.	Path.
Creedmoor State Hospital	Queens Village, N. Y.	Psych.
Raybrook State Tuberculosis Hospital	Raybrook, N. Y.	Pul. Dis., Thor. Surg.
Astor Home for Children	Rhinebeck, N. Y.	Psych.
Genesee Hospital ★	Rochester, N. Y.	Anes., Int. Med., Ob.-Gyn., Path., Per., Rad., Surg.
Highland Hospital ★	Rochester, N. Y.	Int. Med., Ob.-Gyn., Surg.
Monroe County-Iola Sanatorium	Rochester, N. Y.	Pul. Dis.
Rochester General Hospital ★	Rochester, N. Y.	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Rad., Surg.
Rochester State Hospital	Rochester, N. Y.	Psych.
St. Mary's Hospital ★	Rochester, N. Y.	Anes., Genl'. Pract., Int. Med., Ob.-Gyn., Ophth., Path., Ped., Rad., Surg.
Strong Memorial-Rochester Municipal Hospital ★	Rochester, N. Y.	Anes., Int. Met., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped. Allergy, Ped., Plas. Surg., Psych., Rad., Surg., Urol.
University of Rochester School of Medicine and Dentistry	Rochester, N. Y.	Occ. Med.
St. Francis Sanatorium for Cardiac Children	Roslyn, N. Y.	Card. Dis.
U. S. Naval Hospital ★	St. Albans, N. Y.	Anes., Int. Med., Ob.-Gyn., Ophth., Path., Rad., Surg., Thor. Surg., Urol.
Ellis Hospital ★	Schenectady, N. Y.	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Surg.
Glendridge Hospital	Schenectady, N. Y.	Pul. Dis.
St. Vincents' Hospital ★	Staten Island, N. Y.	Ortho. Surg., Path.
Sea View Hospital	Staten Island, N. Y.	Ortho. Surg., Path., Pul. Dis., Thor. Surg.
Staten Island Hospital ★	Staten Island, N. Y.	Int. Med., Path.
U. S. Public Health Service Hospital ★	Staten Island, N. Y.	Anes., Derm., Int. Med., Ophth., Path., Psych., Rad., Surg., Urol.
Veterans Admin. Hospital	Sunmount, N. Y.	Pul. Dis., Thor. Surg.
General Hospital ★	Syracuse, N. Y.	Ob.-Gyn.
St. Joseph's Hospital ★	Syracuse, N. Y.	Anes., Ob.-Gyn., Path.
State University of New York Medical Center ★	Syracuse, N. Y.	Anes., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Plas. Surg., Psych., Rad., Surg., Urol.
Syracuse Psychiatric Hospital	Syracuse, N. Y.	Psych.
Veterans Admin. Hospital	Syracuse, N. Y.	Int. Med., Path., Psych., Pul. Dis., Rad., Surg., Urol.
Letchworth Village	Thiells, N. Y.	Psych.
Samaritan Hospital ★	Troy, N. Y.	Path.
Utica State Hospital	Utica, N. Y.	Path., Psych.
Grasslands Hospital ★	Vallhalla, N. Y.	Anes., Card. Dis., Int. Med., Path., Ped., Phys. Med., Psych., Pul. Dis., Rad., Surg.
Pilgrim State Hospital	West Brentwood, N. Y.	Psych.
Rehabilitation Hospital	West Haverstraw, N. Y.	Ortho. Surg.
New York Hospital—Westchester Division	White Plains, N. Y.	Psych.

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Name	Location	Approved Residencies
White Plains Hospital ★	White Plains, N. Y.	Int. Med., Surg.
Willard State Hospital	Willard, N. Y.	Psych.
Harlem Valley State Hospital	Wingdale, N. Y.	Psych.
St. John's Riverside Hospital ★	Yonkers, N. Y.	Path.
Yonkers General Hospital ★	Yonkers, N. Y.	Gen'l Pract.
✓North Carolina Memorial Hospital ★	Chapel Hill, N. C.	Anes., Derm., Gen'l Pract., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Thor. Surg., Urol.
Charlotte Memorial Hospital ★	Charlotte, N. C.	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Surg., Thor. Surg., Urol.
Presbyterian Hospital	Charlotte, N. C.	Path.
✓Duke Hospital ★	Durham, N. C.	Allergy, Anes., Card. Dis., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped. Allergy, Ped., Plas. Surg., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Lincoln Hospital	Durham, N. C.	Ob.-Gyn., Surg.
McPherson Hospital	Durham, N. C.	Ophth., Otol.
✓Veterans Admin. Hospital	Durham, N. C.	Int. Med., Neuro. Surg., Ophth., Ortho. Surg., Otol., Path., Phys. Med., Plas. Surg., Psych., Rad., Surg., Urol.
Watts Hospital ★	Durham, N. C.	Int. Med., Ob.-Gyn., Path., Ped., Surg., Urol.
U. S. Army Hospital ★	Fort Bragg, N. C.	Surg.
North Carolina Orthopedic Hospital	Gastonia, N. C.	Ortho. Surg.
Moses H. Cone Memorial Hospital ★	Greensboro, N. C.	Path.
Veterans Admin. Hospital	Oteen, N. C.	Path., Pul. Dis., Thor. Surg.
Rex Hospital ★	Raleigh, N. C.	Ob.-Gyn., Ped.
St. Agnes Hospital	Raleigh, N. C.	Ob.-Gyn., Surg.
State Hospital	Raleigh, N. C.	Psych.
State of North Carolina	Raleigh, N. C.	Pub. Health
Babies Hospital	Wilmington, N. C.	Ped.
City Memorial Hospital ★	Winston-Salem, N. C.	Int. Med., Surg.
Kate Bitting Reynolds Memorial Hospital ★	Winston-Salem, N. C.	Surg.
✓North Carolina Baptist Hospital ★	Winston-Salem, N. C.	Anes., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Thor. Surg., Urol.
Bismarck Hospital	Bismarck, N. Dak.	Int. Med., Rad., Surg.
St. Luke's Hospital ★	Fargo, N. Dak.	Int. Med., Ob.-Gyn., Surg.
Akron City Hospital ★	Akron, Ohio	Gen'l Pract., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Rad., Surg., Urol.
✓Akron General Hospital ★	Akron, Ohio	Gen'l Pract., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Rad., Surg.
Children's Hospital	Akron, Ohio	Ortho. Surg., Ped.
St. Thomas Hospital ★	Akron, Ohio	Gen'l Pract., Int. Med., Ob.-Gyn., Surg.
Barberton Citizens Hospital ★	Barberton, Ohio	Gen'l Pract.
Veterans Admin. Hospital	Brecksville, Ohio	Pul. Dis.
Aultman Hospital ★	Canton, Ohio	Int. Med., Ob.-Gyn., Path., Rad., Surg.
Mercy Hospital ★	Canton, Ohio	Anes., Gen'l Pract., Int. Med., Ob.-Gyn., Path., Rad., Surg.
Bethesda Hospital ★	Cincinnati	Ob.-Gyn., Path.
Children's Hospital	Cincinnati	Neuro. Surg., Ortho. Surg., Ped., Surg.
Christ Hospital ★	Cincinnati	Gen'l Pract., Int. Med., Neuro. Surg., Plas. Surg., Surg.
✓Cincinnati General Hospital ★	Cincinnati	Card. Dis., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Urol.
Daniel Drake Memorial Hospital	Cincinnati	Int. Med.
Deaconess Hospital	Cincinnati	Surg.
Good Samaritan Hospital ★	Cincinnati	Gen'l Pract., Int. Med., Neuro. Surg., Ob.-Gyn., Path., Ped., Rad., Surg.
Jewish Hospital ★	Cincinnati	Int. Med., Ortho. Surg., Path., Ped., Rad., Surg.
Longview State Hospital	Cincinnati	Psych.
St. Mary's Hospital ★	Cincinnati	Card. Dis., Int. Med., Surg.
University of Cincinnati, Institute of Industrial Health	Cincinnati	Occ. Med.
✓Veterans Admin. Hospital	Cincinnati	Int. Med., Neuro. Surg., Ortho. Surg., Psych., Surg., Urol.
✓Cleveland Clinic Hospital ★	Cleveland	Anes., Card. Dis., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Rad., Surg., Thor. Surg., Urol.
✓Cleveland Metropolitan General Hospital ★	Cleveland	Anes., Derm., Int. Med., Neuro. Surg., Ob.-Gyn., Ophth., Path., Ped., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Cleveland Receiving Hospital and State Institute of Psychiatry	Cleveland	Psych.
Evangelical Deaconess Hospital ★	Cleveland	Ob.-Gyn., Path., Surg.
Fairview Park Hospital ★	Cleveland	Anes., Gen'l Pract., Int. Med., Ob.-Gyn., Surg.
Highland View Hospital	Cleveland	Int. Med., Phys. Med.
Huron Road Hospital ★	Cleveland	Anes., Int. Med., Ob.-Gyn., Path., Rad., Surg., Urol.
Lutheran Hospital ★	Cleveland	Int. Med., Ob.-Gyn., Path., Surg.
Mount Sinai Hospital ★	Cleveland	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Rad., Surg.
Polyclinic Hospital	Cleveland	Gen'l Pract.
St. Alexis Hospital ★	Cleveland	Anes., Surg.
St. Ann Hospital	Cleveland	Ob.-Gyn.
St. John's Hospital ★	Cleveland	Int. Med., Ob.-Gyn., Surg.
St. Luke's Hospital ★	Cleveland	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Otol., Path., Ped., Rad., Surg.
St. Vincent Charity Hospital ★	Cleveland	Anes., Int. Med., Path., Rad., Surg.
Sunny Acres, Cuyahoga County Tuberculosis Hospital	Cleveland	Pul. Dis., Thor. Surg.
✓University Hospitals ★	Cleveland	Anes., Card. Dis., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Urol.
✓Veterans Admin. Hospital	Cleveland	Gastro., Int. Med., Neuro. Surg., Ophth., Ortho. Surg., Otol., Path., Psych., Rad., Surg., Thor. Surg., Urol.
Woman's Hospital	Cleveland	Gen'l Pract.
Doctors Hospital	Cleveland Heights, Ohio	Int. Med.
Benjamin Franklin Hospital	Columbus, Ohio	Thor. Surg.
Children's Hospital	Columbus, Ohio	Ortho. Surg., Otol., Path., Ped. Allergy, Ped., Surg.
Ohio State University Hospitals		
Columbus Psychiatric Institute and Hospital	Columbus, Ohio	Psych.
Ohio Tuberculosis Hospital	Columbus, Ohio	Pul. Dis., Thor. Surg.
✓University Hospital ★	Columbus, Ohio	Allergy, Anes., Card. Dis., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Phys. Med., Plas. Surg., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Columbus State Hospital	Columbus, Ohio	Psych.
Grant Hospital ★	Columbus, Ohio	Path.
Mount Carmel Hospital ★	Columbus, Ohio	Gen'l Pract., Int. Med., Ob.-Gyn., Ortho. Surg., Surg., Thor. Surg.
St. Ann's Hospital for Women	Columbus, Ohio	Ob.-Gyn.,
St. Anthony Hospital	Columbus, Ohio	Gen'l Pract.
White Cross Hospital ★	Columbus, Ohio	Anes., Card. Dis., Gen'l Pract., Int. Med., Neuro. Surg., Ob.-Gyn., Ortho. Surg., Path., Surg.
Good Samaritan Hospital ★	Dayton, Ohio	Gen'l Pract., Int. Med., Ob.-Gyn., Surg.
Miami Valley Hospital ★	Dayton, Ohio	Gen'l Pract., Int. Med., Path., Rad., Surg.
St. Elizabeth Hospital ★	Dayton, Ohio	Surg.
✓Veterans Admin. Hospital	Dayton, Ohio	Int. Med., Path., Phys. Med., Rad., Surg., Urol.
Elyria Memorial Hospital ★	Elyria, Ohio	Gen'l Pract., Ortho. Surg., Path., Rad., Surg.
Marymount Hospital ★	Garfield Heights, Ohio	Anes., Int. Med., Ob.-Gyn., Path., Surg.
Mercy Hospital ★	Hamilton, Ohio	Int. Med., Ob.-Gyn., Path., Surg.
Lakewood Hospital ★	Lakewood, Ohio	Int. Med., Surg.
Lima Memorial Hospital ★	Lima, Ohio	Gen'l Pract., Int. Med., Ob.-Gyn., Surg.
St. Rita's Hospital ★	Lima, Ohio	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Surg.

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Name	Location	Approved Residencies
St. Joseph Hospital ★	Lorain, Ohio	Path., Rad.
Mansfield General Hospital	Mansfield, Ohio	Surg.
Robinson Memorial Portage County Hospital	Ravenna, Ohio	Gen'l Pract.
Springfield City Hospital ★	Springfield, Ohio	Path.
Ohio Valley Hospital ★	Steubenville, Ohio	Gen'l Pract.
Flower Hospital ★	Toledo, Ohio	Surg.
Maumee Valley Hospital ★	Toledo, Ohio	Int. Med., Obst., Path., Surg.
Mercy Hospital ★	Toledo, Ohio	Gen'l Pract., Ob.-Gyn., Path., Ped., Rad., Surg.
St. Charles Hospital ★	Toledo, Ohio	Gen'l Pract., Psych.
St. Vincent's Hospital ★	Toledo, Ohio	Gen'l Pract., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Surg., Urol.
Toledo Hospital ★	Toledo, Ohio	Anes., Int. Med., Ob.-Gyn., Path.
St. Joseph Riverside Hospital	Warren, Ohio	Gen'l Pract.
Trumbull Memorial Hospital ★	Warren, Ohio	Int. Med., Ob.-Gyn., Path., Ped., Surg.
Harding Sanitarium	Worthington, Ohio	Psych.
St. Elizabeth Hospital ★	Youngstown, Ohio	Anes., Int. Med., Ob.-Gyn., Path., Surg.
Youngstown Hospital ★	Youngstown, Ohio	Anes., Gen'l Pract., Int. Med., Ortho. Surg., Path., Proct., Rad., Surg.
Central Oklahoma State Hospital	Norman, Okla.	Psych.
Bone and Joint Hospital and McBride Clinic	Oklahoma City	Ortho. Surg.
St. Anthony Hospital ★	Oklahoma City	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Plas. Surg., Surg.
State of Oklahoma	Oklahoma City	Pub. Health
University Hospitals ★	Oklahoma City	Anes., Card. Dis., Derm., Gen'l Pract., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Thor. Surg., Urol.
Veterans Admin. Hospital ★	Oklahoma City	Anes., Card. Dis., Derm., Int. Med., Neur., Ortho. Surg., Otol., Path., Psych., Rad., Surg., Urol.
Wesley Hospital ★	Oklahoma City	Int. Med., Rad., Surg.
Hillcrest Medical Center ★	Tulsa, Okla.	Ob.-Gyn.. Path., Ped., Surg.
St. John's Hospital ★	Tulsa, Okla.	Int. Med., Ob.-Gyn., Path., Ped., Plas. Surg., Rad., Surg.
Emanuel Hospital ★	Portland, Ore.	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Surg.
Good Samaritan Hospital ★	Portland, Ore.	Int. Med., Neuro. Surg., Path., Surg.
Providence Hospital ★	Portland, Ore.	Int. Med., Path., Rad., Surg.
St. Vincent's Hospital ★	Portland, Ore.	Gen'l Pract., Int. Med., Path., Rad., Surg.
Shriners Hospital for Crippled Children	Portland, Ore.	Ortho. Surg.
State of Oregon	Portland, Ore.	Pub. Health
University of Oregon Medical School Hospitals and Clinics ★	Portland, Ore.	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Rad., Surg., Thor. Surg., Urol.
Veterans Admin. Hospital	Portland, Ore.	Card. Dis., Gastro., Int. Med., Neuro. Surg., Ortho. Surg., Otol., Path., Phys. Med., Pul. Dis., Surg., Urol.
Oregon State Hospital	Salem, Ore.	Psych.
Abington Memorial Hospital ★	Abington, Pa.	Int. Med., Ob.-Gyn., Path., Psych., Rad., Surg.
Allentown Hospital ★	Allentown, Pa.	Int. Med., Ob.-Gyn., Path., Plas. Surg., Proct., Surg.
Allentown State Hospital	Allentown, Pa.	Psych.
Sacred Heart Hospital ★	Allentown, Pa.	Int. Med., Path., Rad., Surg.
Altoona Hospital ★	Altoona, Pa.	Gen'l Pract., Ob.-Gyn., Path., Surg.
St. Luke's Hospital ★	Bethlehem, Pa.	Int., Med., Ob.-Gyn., Path., Surg.
Bradford Hospital	Bradford, Pa.	Surg.
Lower Bucks County Hospital	Bristol, Pa.	Gen'l Pract.
Bryn Mawr Hospital ★	Bryn Mawr, Pa.	Int. Med., Path., Rad., Surg.
Chester Hospital ★	Chester, Pa.	Gen'l Pract., Path.
Veterans Admin. Hospital	Coatesville, Pa.	Psych.
Danville State Hospital	Danville, Pa.	Psych.
Geo. F. Geisinger Memorial Hospital ★	Danville, Pa.	Anes., Derm., Gen'l Pract., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Rad., Surg.
Fitzgerald-Mercy Hospital ★	Darby, Pa.	Ob.-Gyn., Path., Rad.
Eagleville Sanatorium for Consumptives	Eagleville, Pa.	Pul. Dis.
Easton Hospital ★	Easton, Pa.	Int. Med., Surg.
State Hospital for Crippled Children	Elizabethtown, Pa.	Ortho. Surg.
Embreeville State Hospital	Embreeville, Pa.	Psych.
Hamot Hospital ★	Erie, Pa.	Int. Med., Ortho. Surg., Path., Rad., Surg., Urol.
St. Vincent's Hospital ★	Erie, Pa.	Gen'l Pract., Int. Med., Path., Rad., Surg., Urol.
Harrisburg Hospital ★	Harrisburg, Pa.	Int. Med., Ob.-Gyn., Path., Ped., Surg., Urol.
Harrisburg Polyclinic Hospital ★	Harrisburg, Pa.	Int. Med., Path., Ped., Surg.
Harrisburg State Hospital	Harrisburg, Pa.	Psych.
State of Pennsylvania	Harrisburg, Pa.	
Hazleton State Hospital	Hazleton, Pa.	Surg.
St. Joseph Hospital	Hazleton, Pa.	Surg.
Conemaugh Valley Memorial Hospital ★	Johnstown, Pa.	Anes., Path.
Lancaster General Hospital ★	Lancaster, Pa.	Gen'l Pract., Path.
St. Joseph's Hospital ★	Lancaster, Pa.	Gen'l Pract., Path.
Mayview State Hospital	Mayview, Pa.	Psych.
Montgomery Hospital ★	Norristown, Pa.	Gen'l Pract., Path.
Norristown State Hospital	Norristown, Pa.	Psych.
Sacred Heart Hospital ★	Norristown, Pa.	Gen'l Pract., Surg.
Albert Einstein Medical Center		
Northern Division ★	Philadelphia	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Psych., Rad., Surg., Urol.
Southern Division ★	Philadelphia	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Psych., Rad., Surg., Urol.
Chestnut Hill Hospital ★	Philadelphia	Int. Med., Ob.-Gyn.
Children's Hospital	Philadelphia	Ortho. Surg., Path., Ped. Allergy, Ped., Surg.
Eastern Pennsylvania Psychiatric Institute	Philadelphia	Psych.
Episcopal Hospital ★	Philadelphia	Int. Med., Ob.-Gyn., Path., Rad., Surg., Thor. Surg., Urol.
Frankford Hospital ★	Philadelphia	Int. Med., Ob.-Gyn., Path., Surg.
Friends Hospital	Philadelphia	Psych.
Germantown Dispensary and Hospital ★	Philadelphia	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Graduate Hospital of the University of Pennsylvania ★	Philadelphia	Anes., Card. Dis., Derm., Gastro., Gyn., Int. Med., Neur., Neuro. Surg., Ophth., Ortho. Surg., Otol., Path., Ped., Plas. Surg., Pul. Dis., Rad., Surg., Urol.
Hahnemann Medical College and Hospital ★	Philadelphia	Anes., Card. Dis., Derm., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Psych., Rad., Surg., Thor. Surg., Urol.
Hospital of the University of Pennsylvania ★	Philadelphia	Allergy, Anes., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Plas. Surg., Psych., Pul. Dis., Rad., Surg., Urol.
Hospital of the Woman's Medical College of Pennsylvania ★	Philadelphia	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Institute of the Pennsylvania Hospital	Philadelphia	Psych.
Jeanes Hospital	Philadelphia	Rad., Surg.
Jefferson Medical College Hospital ★	Philadelphia	Anes., Derm., Gastro., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Urol.
Lankenau Hospital ★	Philadelphia	Int. Med., Ob.-Gyn., Path., Surg.
Mercy-Douglass Hospital ★	Philadelphia	Int. Med., Ob.-Gyn., Surg.
Methodist Episcopal Hospital ★	Philadelphia	Int. Med., Ob.-Gyn., Surg.
Misericordia Hospital ★	Philadelphia	Ob.-Gyn., Path., Surg.

★ Indicates hospitals approved for training interns.

Name	Location	Approved Residencies
Nazareth Hospital ★	Philadelphia	Int. Med., Rad., Surg.
Pennsylvania Hospital ★	Philadelphia	Anes., Card. Dis., Derm., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Rad., Surg., Urol.
Pennsylvania Hospital—Department for Mental and Nervous Diseases	Philadelphia	Psych.
Philadelphia General Hospital ★	Philadelphia	Anes., Card. Dis., Derm., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Phys. Med., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Philadelphia Psychiatric Hospital	Philadelphia	Psych.
Philadelphia State Hospital	Philadelphia	Psych.
Presbyterian Hospital ★	Philadelphia	Anes., Card. Dis., Int. Med., Ob.-Gyn., Path., Rad., Surg., Thor. Surg.
St. Christopher's Hospital for Children	Philadelphia	Ped.
St. Joseph's Hospital ★	Philadelphia	Surg.
St. Luke's and Children's Medical Center ★	Philadelphia	Ped.
St. Mary's Hospital ★	Philadelphia	Gen'l Pract., Ob.-Gyn., Surg.
Shriners Hospital for Crippled Children	Philadelphia	Ortho. Surg.
Skin and Cancer Hospital	Philadelphia	Derm.
Temple University Hospital	Philadelphia	Allergy, Anes., Card. Dis., Gastro., Int. Med., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Proct., Psych., Rad., Surg., Urol.
U. S. Naval Hospital ★	Philadelphia	Anes., Derm., Int. Med., Neuro., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Rad., Surg., Urol.
Veterans Admin. Hospital	Philadelphia	Card. Dis., Int. Med., Ortho. Surg., Path., Phys. Med., Rad., Surg., Urol.
Wills Eye Hospital	Philadelphia	Ophth.
Woman's Hospital ★	Philadelphia	Ob.-Gyn., Surg.
Allegheny General Hospital ★	Pittsburgh	Anes., Int. Med., Neuro. Surg., Ortho. Surg., Path., Ped., Rad., Surg., Thor. Surg., Urol.
Children's Hospital	Pittsburgh	Neuro. Surg., Ortho. Surg., Path., Ped., Surg.
Elizabeth Steel Magee Hospital	Pittsburgh	Int. Med., Ob.-Gyn.
Eye and Ear Hospital	Pittsburgh	Ophth., Otol.
Mercy Hospital ★	Pittsburgh	Anes., Int. Med., Neuro. Surg., Ob.-Gyn., Otol., Path., Rad., Surg., Urol.
Montefiore Hospital ★	Pittsburgh	Allergy, Anes., Int. Med., Obst., Ophth., Path., Rad., Surg.
Pittsburgh Hospital ★	Pittsburgh	Int. Med., Ob.-Gyn.
Presbyterian Hospital ★	Pittsburgh	Card. Dis., Int. Med., Neuro. Surg., Ortho. Surg., Path., Plas. Surg., Proct., Rad., Surg., Urol.
St. Francis-General Hospital and Rehabilitation Institute ★	Pittsburgh	Anes., Card. Dis., Int. Med., Neuro. Surg., Ob.-Gyn., Ortho. Surg., Path., Psych., Rad., Surg.
St. John's General Hospital ★	Pittsburgh	Gen'l Pract.
St. Margaret Memorial Hospital ★	Pittsburgh	Int. Med., Ob.-Gyn., Path., Surg.
Shadyside Hospital ★	Pittsburgh	Path.
South Side Hospital ★	Pittsburgh	Ob.-Gyn., Path.
University of Pittsburgh Graduate School of Public Health	Pittsburgh	Occ. Med.
Veterans Admin. Hospital	Pittsburgh	Allergy, Int. Med., Neur., Ophth., Ortho. Surg., Otol., Path., Phys. Med., Rad., Surg., Urol.
Western Pennsylvania Hospital ★	Pittsburgh	Int. Med., Obst., Path., Rad., Surg.
Western Psychiatric Institute and Clinic	Pittsburgh	Psych.
A. C. Milliken Hospital	Pottsville, Pa.	Gen'l Pract.
Community General Hospital ★	Reading, Pa.	Gen'l Pract., Path.
Reading Hospital ★	Reading, Pa.	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Rad., Surg.
St. Joseph's Hospital ★	Reading, Pa.	Path., Surg.
Robert Packer Hospital ★	Sayre, Pa.	Anes., Int. Med., Ortho. Surg., Path., Ped., Rad., Surg., Urol.
Scranton State Hospital ★	Scranton, Pa.	Path.
Sharon General Hospital	Sharon, Pa.	Gen'l Pract.
Samuel G. Dixon State Hospital	South Mountain, Pa.	Pul. Dis.
Warren State Hospital	Warren, Pa.	Psych.
Chester County Hospital ★	West Chester, Pa.	Rad.
Mercy Hospital ★	Wilkes-Barre, Pa.	Surg., Urol.
Wilkes-Barre General Hospital ★	Wilkes-Barre, Pa.	Path., Surg., Urol.
Columbia Hospital ★	Wilkinsburg, Pa.	Surg.
Williamsport Hospital ★	Williamsport, Pa.	Path., Surg.
York Hospital ★	York, Pa.	Path., Surg.
Aguadilla District Hospital ★	Aguadilla, P. R.	Path.
Arecibo District Hospital ★	Arecibo, P. R.	Gen'l Pract., Path.
Bayamon District Hospital ★	Bayamon, P. R.	Int. Med., Ob.-Gyn., Path., Ped., Surg.
Puerto Rico Institute of Psychiatry	Bayamon, P. R.	Psych.
Hospital Auxilio Muto	Hato Rey, P. R.	Gen'l Pract.
Hospital De Damas ★	Ponce, P. R.	Anes., Surg.
Ponce District General Hospital ★	Ponce, P. R.	Int. Med., Ob.-Gyn., Path., Surg.
Psychiatric Center for Training and Research	Rio Piedras, P. R.	Psych.
San Juan City Hospital ★	Santurce, P. R.	Anes., Int. Med., Ob.-Gyn., Ophth., Path., Ped., Rad., Surg., Urol.
Dr. I. Gonzalez Martinez Oncologic Hospital	Santurce, P. R.	Path., Rad., Surg.
Veterans Admin. Hospital	San Juan, P. R.	Int. Med., Path., Phys. Med., Rad., Surg.
State Hospital for Mental Diseases	Howard, R. I.	Psych.
Newport Hospital ★	Newport, R. I.	Gen'l Pract., Int. Med., Path.
Memorial Hospital ★	Pawtucket, R. I.	Gen'l Pract., Int. Med., Path.
Butler Hospital	Providence, R. I.	Psych.
Charles V. Chapin Hospital	Providence, R. I.	Ped., Psych.
Miriam Hospital ★	Providence, R. I.	Card. Dis., Int. Med.
Providence Lying-In Hospital	Providence, R. I.	Obst.
Rhode Island Hospital ★	Providence, R. I.	Anes., Card. Dis., Gyn., Int. Med., Ortho. Surg., Otol., Path., Ped. Allergy, Ped., Surg., Urol.
Veterans Admin. Hospital	Providence, R. I.	Int. Med., Surg.
Emma Pendleton Bradley Hospital	Riverside, R. I.	Psych.
Woonsocket Hospital	Woonsocket, R. I.	Gen'l Pract.
Teaching Hospitals of the Medical College of South Carolina ★	Charleston, S. C.	Anes., Int. Med., Neur., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad., Surg., Urol.
Columbia Hospital ★	Columbia, S. C.	Int. Med., Ob.-Gyn., Ortho. Surg., Ped., Surg.
McLeod Infirmary ★	Florence, S.C.	Ob.-Gyn.
Greenville General Hospital ★	Greenville, S. C.	Gen'l Pract., Ob.-Gyn., Ortho. Surg., Path., Ped., Surg.
Shriners Hospital for Crippled Children	Greenville, S. C.	Ortho. Surg.
Orangeburg Regional Hospital ★	Orangeburg, S. C.	Urol.
Spartanburg General Hospital ★	Spartanburg, S. C.	Gen'l Pract., Path., Rad., Surg.
Sioux Valley Hospital ★	Sioux Falls, S. Dak.	Gen'l Pract., Path.
Sacred Heart Hospital ★	Yankton, S. Dak.	Gen'l Pract., Ob.-Gyn., Surg.
Baroness Erlanger Hospital ★	Chattanooga, Tenn.	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Rad., Surg.
Memorial Hospital	Chattanooga, Tenn.	Ob.-Gyn., Surg.
Newell Hospital	Chattanooga, Tenn.	Surg.
T. C. Thompson Children's Hospital	Chattanooga, Tenn.	Ped.
East Tennessee Baptist Hospital ★	Knoxville, Tenn.	Ortho. Surg., Path.
East Tennessee Children's Hospital	Knoxville, Tenn.	Ortho. Surg.
St. Mary's Memorial Hospital ★	Knoxville, Tenn.	Gen'l Pract., Int. Med., Ortho. Surg., Path., Surg.
University of Tennessee Memorial Research Center and Hospital ★	Knoxville, Tenn.	Anes., Gen'l Pract., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Surg.

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Name	Location	Approved Residencies
Baptist Memorial Hospital ★	Memphis, Tenn.	Int. Med., Neuro. Surg., Ob.-Gyn., Path., Ped., Rad., Surg., Urol.
Campbell Clinic Hospital	Memphis, Tenn.	Ortho. Surg.
City of Memphis Hospitals ★	Memphis, Tenn.	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Otol., Path., Ped., Rad., Surg., Urol.
Gailor Memorial Psychiatric Hospital	Memphis, Tenn.	Psych.
Le Bonheur Children's Hospital	Memphis, Tenn.	Ped.
Memphis Eye, Ear, Nose and Throat Hospital	Memphis, Tenn.	Ophth.
Methodist Hospital ★	Memphis, Tenn.	Path., Rad., Surg.
St. Joseph's Hospital ★	Memphis, Tenn.	Int. Med., Ob.-Gyn., Path., Ped., Surg.
Veterans Admin. Hospital	Memphis, Tenn.	Gastro., Int. Med., Ophth., Ortho. Surg., Otol., Path., Phys. Med., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
West Tennessee Tuberculosis Hospital	Memphis, Tenn.	Pul. Dis., Thor. Surg.
Baptist Hospital ★	Nashville, Tenn.	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Ped., Surg.
George W. Hubbard Hospital of Meharry Medical College ★	Nashville, Tenn.	Int. Med., Obst., Path., Ped., Surg., Urol.
Nashville General Hospital	Nashville, Tenn.	Int. Med., Ob.-Gyn., Path.
St. Thomas Hospital ★	Nashville, Tenn.	Int. Med., Ob.-Gyn., Surg.
Vanderbilt University Hospital ★	Nashville, Tenn.	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ortho Surg., Path., Ped., Psych., Rad., Surg., Thor. Surg., Urol.
Veterans Admin. Hospital	*Nashville, Tenn.*	Int. Med., Pul. Dis., Rad., Surg.
Oak Ridge Institute of Nuclear Studies	Oak Ridge, Tenn.	Int. Med., Path.
Oakville Memorial Sanatorium	Oakville, Tenn.	Pul. Dis.
Austin State Hospital	Austin, Texas	Psych.
Brackenridge Hospital ★	Austin, Texas	Path., Surg.
State of Texas	Austin, Texas	Pub. Health
Driscoll Foundation Children's Hospital	Corpus Christie, Texas	Ped.
Baylor University Hospital ★	*Dallas, Texas*	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Phys. Med., Plas. Surg., Proct., Rad., Surg., Thor. Surg., Urol.
Children's Medical Center ★	Dallas, Texas	Ped. Allergy, Ped.
Gaston Hospital	Dallas, Texas	Surg.
Methodist Hospital ★	Dallas, Texas	Int. Med., Ob.-Gyn., Path., Surg.
Parkland Memorial Hospital ★	Dallas, Texas	Anes., *Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Path., Psych., Pul. Dis,* Rad., Surg., Urol.
St. Paul's Hospital ★	Dallas, Texas	Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg.
Texas Scottish Rite Hospital for Crippled Children	Dallas, Texas	Ortho. Surg.
Timberlawn Sanitarium	Dallas, Texas	Psych.
Veterans Admin. Hospital★	Dallas, Texas	Int. Med., Ophth., Ortho. Surg., Otol., Pul. Dis., Rad., Surg., Thor. Surg, Urol.
Hotel Dieu ★	El Paso, Texas	Ob.-Gyn., Ortho. Surg.
William Beaumont Army Hospital ★	El Paso, Texas	Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Surg.
All Saints Hospital	Fort Worth, Texas	Gen'l Pract.
Harris Hospital ★	Fort Worth, Texas	Anes., Int. Med., Ob.-Gyn., Path., Surg.
St. Joseph Hospital ★	Fort Worth, Texas	Path.
St. Mary's Hospital	Galveston, Texas	Gen'l Pract.
University of Texas Medical Branch Hospitals ★	Galveston, Texas	Anes., Card. Dis., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Plas. Surg., Psych., Rad., Surg., Thor. Surg., Urol.
Gonzales Warm Springs Foundation for Crippled Children	Gonzales, Texas	Phys. Med.
Hermann Hospital ★	Houston, Texas	Anes., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Rad., Surg., Urol.
Jefferson Davis Hospital ★	Houston, Texas	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Plas. Surg., Psych., Rad., Surg., Thor. Surg., Urol.
Memorial Hospital ★	Houston, Texas	Gen'l Pract., Int. Med., Path.
Methodist Hospital ★	Houston, Texas	Anes., Derm., Int. Med., Neuro. Surg., Ob.-Gyn., Otol., Path., Ped, Plas. Surg., *Psych., Rad.,* Surg., Thor. Surg., *Urol.*
St. Joseph's Hospital ★	Houston, Texas	Anes., Int. Med., Ob.-Gyn., Path., Ped., Rad., Surg., Urol.
St. Luke's Episcopal Hospital	Houston, Texas	Int. Med., Ob.-Gyn., Surg., Urol.
Southern Pacific Hospital	Houston, Texas	Surg.
Texas Children's Hospital	Houston, Texas	Derm., Path., Ped. Allergy, Ped., Plas. Surg., Surg.
University of Texas M. D. Anderson Hospital for Cancer Research	Houston, Texas	Anes., Gyn., Int. Med., Path., Rad., Surg.
Veterans Admin. Hospital	Houston, Texas	Anes., Derm., Int. Med., Neur., Neuro. Surg., Ophth., Ortho. Surg., Otol., Path., Phys. Med., Plas. Surg., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Veterans Admin. Hospital ★	McKinney, Texas	Int. Med., Path.
U. S. Air Force School of Aviation Medicine	Randolph Field, Texas	Aviat. Med.
Baptist Memorial Hospital	San Antonio, Texas	Gen'l Pract., Ob.-Gyn., Path., Rad., Surg.
Brooke Army Hospital ★	San Antonio, Texas	Anes., Card. Dis., Derm., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Plas. Surg., Rad., Surg., Urol.
Robert B. Green Memorial Hospital ★	San Antonio, Texas	Gen'l Pract., Int. Med., Ob.-Gyn., Ophth., Path., Ped., Plas. Surg., Rad., Surg.
Santa Rosa Hospital ★	San Antonio, Texas	Gen'l Pract., Int. Med., Path., Ped., Plas. Surg., Rad.
U. S. Air Force Hospital ★	San Antonio, Texas	Anes., Gastro., Gen'l Pract., Int. Med., Ob.-Gyn., Ophth., Ortho. Surg., *Path.,* Ped., Rad., Surg., *Urol.*
Scott and White Memorial Hospitals ★	Temple, Texas	Anes., Int. Med., Ophth., Ortho. Surg., Path., Rad., Surg.
U. S. Air Force Hospital	Wichita Falls, Texas	Surg.
Wichita General Hospital	Wichita Falls, Texas	Gen'l Pract.
St. Benedict's Hospital ★	Ogden, Utah	Gen'l Pract., Path.
Thomas D. Dee Memorial Hospital ★	Ogden, Utah	Anes., Gen'l Pract., Int. Med., Ob.-Gyn., Path., Surg.
Dr. W. H. Groves Latter-Day Saints Hospital ★	Salt Lake City	Gen'l Pract., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Plas. Surg., Rad., Surg., Thor. Surg.
Holy Cross Hospital ★	Salt Lake City	Int. Med., Ob.-Gyn., Path., Rad., Surg.
Primary Children's Hospital	Salt Lake City	Ortho. Surg.
St. Mark's Hospital ★	Salt Lake City	Surg.
Salt Lake County General Hospital ★	Salt Lake City	Anes., Int. Med., Ob.-Gyn., Ortho. Surg., Path., Ped., Psych., Rad., Surg.
Shriners Hospitals for Crippled Children	Salt Lake City	Ortho. Surg.
Veterans Admin. Hospital ★	Salt Lake City	Int. Med., Neur., Ortho. Surg., Path., Psych., Rad., Surg.
Brattleboro Retreat	Brattleboro, Vt.	Psych.
De Goesbriand Memorial Hospital ★	Burlington, Vt.	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Otol., Path., Ped., Rad., Surg., Urol.
Mary Fletcher Hospital ★	Burlington, Vt.	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Otol., Path., Ped., Rad., Surg., Urol.
Vermont State Hospital	Waterbury, Vt.	Psych.
Veterans Admin. Hospital	White River Jct., Vt.	Anes., Int. Med., Neuro. Surg., Ortho. Surg., Surg., Urol.
Alexandria Hospital ★	Alexandria, Va.	Int. Med., Ob.-Gyn., Ped.

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Name	Location	Approved Residencies
Arlington Hospital	Arlington, Va.	Ob.-Gyn.
Blue Ridge Sanatorium	Charlottesville, Va.	Pul. Dis.
✓University of Virginia Hospital ★	Charlottesville, Va.	Allergy, Anes., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Psych., Rad.; Surg., Thor. Surg., Urol.
[illegible] ★	Clifton Forge, Va.	Int. Med., Surg.
[illegible]	Danville, Va.	Path., Urol.
[illegible]	Fort Belvoir, Va.	Surg.
[illegible]	Lynchburg, Va.	Path., Surg.
Riverside Hospital ★	Newport News, Va.	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Surg.
De Paul Hospital ★	Norfolk, Va.	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Rad., Surg.
Norfolk Community Hospital	Norfolk, Va.	Gen'l Pract.
Norfolk General Hospital ★	Norfolk, Va.	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Rad., Surg.
U. S. Public Health Service Hospital ★	Norfolk, Va.	Gen'l Pract.
Portsmouth General Hospital	Portsmouth, Va.	Gen'l Pract.
U. S. Naval Hospital ★	Portsmouth, Va.	Int. Med., Ob.-Gyn., Ortho. Surg., Ped., Surg.
Crippled Children's Hospital	Richmond, Va.	Ortho. Surg.
[illegible] ★	Richmond, Va.	Int. Med., Ob.-Gyn., Path., Surg.
[illegible] nia—Hospital Division ★	Richmond, Va.	Allergy, Anes., Int. Med., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped., Phys. Med., Psych., Pul. Dis., Rad., Surg., Urol.
Retreat for the Sick	Richmond, Va.	Gen'l Pract.
Richmond Memorial Hospital ★	Richmond, Va.	Path., Surg.
St. Elizabeth Hospital	Richmond, Va.	Surg.
State of Virginia	Richmond, Va.	Pub. Health
✓Veterans Admin. Hospital	Richmond, Va.	Anes., Card. Dis., Gastro., Int. Med., Neur., Neuro. Surg., Ophth., Ortho. Surg., Path., Phys. Med., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Gill Memorial Eye, Ear and Throat Hospital	Roanoke, Va.	Ophth., Otol.
Jefferson Hospital ★	Roanoke, Va.	Int. Med., Surg.
Lewis-Gale Hospital ★	Roanoke, Va.	Int. Med., Surg.
Roanoke Memorial Hospital ★	Roanoke, Va.	Int. Med.
Louis Obici Memorial Hospital	Suffolk, Va.	Gen'l Pract.
Eastern State Hospital	Williamsburg, Va.	Psych.
Children's Orthopedic Hospital ★	Seattle	Anes., Ortho. Surg., Path., Ped., Surg.
Doctor's Hospital ★	Seattle	Anes., Int. Med., Ob.-Gyn., Path., Surg.
Firland Sanatorium	Seattle	Pul. Dis., Thor. Surg.
✓King County Hospital Unit No. 1 (Harborview) ★	Seattle	Anes., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Path., Ped., Phys. Med., Psych., Rad., Surg., Urol.
Providence Hospital ★	Seattle	Gen'l Pract., Int. Med., Obst., Ortho. Surg., Path., Rad., Surg.
State of Washington	Seattle	Pub. Health
Swedish Hospital ★	Seattle	Anes., Int. Med., Ob.-Gyn., Path., Surg.
U. S. Public Health Service Hospital ★	Seattle	Int. Med., Path., Surg.
University Hospital ★	Seattle	Int. Med., Neur., Neuro. Surg., Psych., Rad., Surg., Urol.
✓Veterans Admin. Hospital	Seattle	Anes., Int. Med., Neur., Neuro. Surg., Ortho. Surg., Path., Psych., Rad., Surg., Urol.
Virginia Mason Hospital ★	Seattle	Anes., Int. Med., Obst., Path., Rad., Surg.
Deaconess Hospital ★	Spokane, Wash.	Int. Med., Path.
Sacred Heart Hospital ★	Spokane, Wash.	Gen'l Pract., Ob.-Gyn., Path., Rad., Surg., Thor. Surg.
St. Luke's Hospital ★	Spokane, Wash.	Gen'l Pract., Ob.-Gyn., Path.
Shriners Hospitals for Crippled Children	Spokane, Wash.	Ortho. Surg.
Madigan Army Hospital ★	Tacoma, Wash.	Int. Med., Ob.-Gyn., Path., Ped., Surg.
St. Joseph Hospital ★	Tacoma, Wash.	Path.
Tacoma General Hospital ★	Tacoma, Wash.	Anes., Path.
Beckley Hospital	Beckley, W. Va.	Surg.
Beckley Memorial Hospital	Beckley, W. Va.	Int. Med., Path., Ped., Surg.
Bluefield Sanitarium	Bluefield, W. Va.	Gen'l Pract.
Charleston General Hospital ★	Charleston, W. Va.	Gen'l Pract., Int. Med., Path., Surg.
Kanawha Valley Hospital ★	Charleston, W. Va.	Surg.
Memorial Hospital ★	Charleston, W. Va.	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Ped., Surg.
St. Mary's Hospital	Clarksburg, W. Va.	Path.
Cabell-Huntington Hospital ★	Huntington, W. Va.	Gen'l Pract., Int. Med., Path., Surg.
Chesapeake and Ohio Hospital	Huntington, W. Va.	Int. Med., Surg.
St. Mary's Hospital ★	Huntington, W. Va.	Path., Surg.
Veterans Admin. Hospital	Martinsburg, W. Va.	Path., Surg.
Laird Memorial Hospital	Montgomery, W. Va.	Surg.
St. Joseph's Hospital ★	Parkersburg, W. Va.	Gen'l Pract.
Broaddus Hospital	Philippi, W. Va.	Surg.
Ohio Valley General Hospital ★	Wheeling, W. Va.	Anes., Gen'l Pract., Int. Med., Path., Surg.
Memorial Medical Center	Williamson, W. Va.	Int. Med.
Beloit Hospital	Beloit, Wis.	Path.
St. Agnes Hospital ★	Fond du Lac, Wis.	Path.
Mercy Hospital ★	Janesville, Wis.	Surg.
La Crosse Lutheran Hospital ★	La Crosse, Wis.	Int. Med., Surg.
St. Francis Hospital ★	La Crosse, Wis.	Gen'l Pract.
Madison General Hospital ★	Madison, Wis.	Int. Med., Path., Surg., Urol.
Mendota State Hospital	Madison, Wis.	Psych.
Methodist Hospital ★	Madison, Wis.	Surg.
St. Mary's Hospital ★	Madison, Wis.	Gen'l Pract., Int. Med., Ob.-Gyn.
✓University Hospitals ★	Madison, Wis.	Allergy, Anes., Card. Dis., Derm., Int. Med., Neur., Neuro. Surg., Ob.-Gyn., Ophth., Ortho. Surg., Otol., Path., Ped. Allergy, Ped., Plas. Surg., Psych., Rad., Surg., Urol.
Veterans Admin. Hospital	Madison, Wis.	Pul. Dis.
St. Joseph's Hospital ★	Marshfield, Wis.	Path., Surg.
Columbia Hospital ★	Milwaukee	Int. Med., Obst., Ortho. Surg., Path., Rad., Surg.
Evangelical Deaconess Hospital ★	Milwaukee	Gen'l Pract., Path., Rad., Surg.
Milwaukee Children's Hospital ★	Milwaukee	Ortho. Surg., Ped.
✓Milwaukee County Hospital ★	Milwaukee	Gen'l Pract., Int. Med., Ob.-Gyn., Ophth., Path., Ped., Proct., Rad., Surg., Urol.
Milwaukee Hospital ★	Milwaukee	Gen'l Pract., Int. Med., Ob.-Gyn , Path., Rad., Surg.
Milwaukee County Hospital for Mental Diseases	Milwaukee	Psych.
Mount Sinai Hospital ★	Milwaukee	Int. Med., Ob.-Gyn., Path., Rad., Surg.
Muirdale Sanatorium	Milwaukee	Pul. Dis.
St. Joseph Hospital ★	Milwaukee	Int. Med., Ob.-Gyn., Path., Rad., Surg.
St. Luke's Hospital ★	Milwaukee	Gen'l Pract., Int. Med., Ob.-Gyn., Path., Rad., Surg.
St. Mary's Hospital ★	Milwaukee	Int. Med., Ob.-Gyn., Path.
St. Michael's Hospital ★	Milwaukee	Gen'l Pract.
✓Veterans Admin. Hospital	Milwaukee, (Wood)	Anes., Derm., Gastro., Int. Med., Ophth., Ortho. Surg., Otol., Path., Phys. Med., Psych., Pul. Dis., Rad., Surg., Thor. Surg., Urol.
Milwaukee Sanitarium Foundation	Wauwautosa, Wis.	Psych.

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REQUIREMENTS FOR CERTIFICATION

AMERICAN SPECIALTY BOARDS

Examining and certifying boards in 19 specialties have been approved by the Council on Medical Education and Hospitals of the American Medical Association and the Advisory Board for Medical Specialties on the basis of minimal standards governing accreditation of specialty boards as formulated by the Council.

The primary purposes of the boards are (1) to conduct investigations and examinations to determine the competence of voluntary candidates for certificates issued by the respective boards, (2) to grant and issue certificates of qualification to candidates successful in demonstrating their proficiency, (3) to stimulate the development of adequate training facilities, (4) to aid in evaluating residencies and fellowships under consideration by the Council on Medical Education and Hospitals of the American Medical Association, and (5) to advise physicians desiring certification as to the course of study and training to be pursued.

The boards are in no sense educational institutions, and the certificate of a board is not to be considered a degree. It does not confer on any person legal qualifications, privileges, or a license to practice medicine or a specialty. The boards do not purport in any way to interfere with or limit the professional activities of any licensed physician, nor do they desire to interfere with any practitioners of medicine in any of their regular or legitimate duties.

Two boards certify candidates in subspecialties. The American Board of Internal Medicine certifies in allergy, cardiovascular disease, gastroenterology, and pulmonary diseases. The American Board of Pediatrics certifies in allergy. Certification in the primary field is a requirement for certification in the subspecialties. The Board of Thoracic Surgery, which is organized as an affiliate board of the American Board of Surgery, requires certification in surgery as a prerequisite to certification in thoracic surgery.

Certificates in special divisions of their specialty are conferred by six boards. The American Board of Obstetrics and Gynecology will issue certificates in obstetrics or gynecology only. The American Board of Otolaryngology grants a limited certificate in endoscopy. The American Board of Pathology issues certificates in pathological anatomy, clinical pathology, a combination of these two fields, pathological anatomy and clinical microbiology, clinical microbiology and clinical chemistry, clinical bacteriology, neuropathology, clinical microbiology, hematology, and clinical chemistry. The American Board of Preventive Medicine issues certificates in public health, aviation medicine, and occupational medicine. The American Board of Psychiatry and Neurology issues separate certificates in psychiatry and in neurology or a combined certificate for those qualified in both fields. This board also issues supplementary certificates in psychiatry and in neurology. The American Board of Radiology issues certificates in radiology, roentgenology, therapeutic radiology, diagnostic roentgenology, therapeutic roentgenology, radium therapy, radiologic physics, x-ray and radium physics, and medical nuclear physics.

The majority of the American specialty boards have published booklets containing a list of their officers together with statements regarding organization, purposes, and qualifications that determine eligibility for certification. In this issue of The Journal, there are published, with the consent of each board concerned, the requirements for certification in specialties. This information is published for the convenience of those physicians who are planning to seek board certification. Any specific inquiry concerning certification by a specialty board should be addressed to the board secretary, whose name and address will be found in this issue of The Journal.

Table 1.—*Approved Examining Boards in Medical Specialties*

Name of Board	Year of Activation	Total Certificates Awarded to June 30, 1959
American Board of Anesthesiology	1937	2,054
American Board of Dermatology	1932	1,945
American Board of Internal Medicine	1936	12,442
American Board of Neurological Surgery	1940	818
American Board of Obstetrics and Gynecology	1930	5,853
American Board of Ophthalmology	1915	4,996
American Board of Orthopaedic Surgery	1934	3,173
American Board of Otolaryngology	1924	5,385
American Board of Pathology	1936	3,929
American Board of Pediatrics	1933	6,917
American Board of Physical Medicine and Rehabilitation	1947	369
American Board of Plastic Surgery	1937	427
American Board of Preventive Medicine	1948	2,068
American Board of Proctology	1949	279
American Board of Psychiatry and Neurology	1934	6,451
American Board of Radiology	1934	6,583
American Board of Surgery	1937	10,220
Board of Thoracic Surgery (Affiliate of the American Board of Surgery)	1949	932
American Board of Urology	1935	2,606
Totals		77,447
Certification in Subspecialties		
American Board of Internal Medicine		
Allergy		169
Cardiovascular Disease		609
Gastroenterology		409
Pulmonary Diseases		268
Totals		1,455
American Board of Pediatrics		
Allergy		90
American Board of Surgery		
Proctology		81*
Totals		1,626
Special Certification		
American Board of Obstetrics and Gynecology		
Obstetrics		14
Gynecology		24
Totals		38
American Board of Otolaryngology		
Endoscopy		4
American Board of Pathology		
Pathological Anatomy		2,025
Clinical Pathology		598
Pathological Anato[illegible]		1,220
Pathological Anato[illegible]		1
Clinical Microbiology and Clinical Chemistry		1
Clinical Bacteriology		2
Neuropathology		20
Clinical Microbiology		19
Hematology		6
Clinical Chemistry		9
Forensic Pathology		19
Totals		3,929
American Board of Preventive Medicine		
Aviation Medicine		379
Occupational Medicine		361
Public Health		1,328
Totals		2,068
American Board of Psychiatry and Neurology		
Psychiatry		5,023
Neurology		452
Psychiatry and Neurology		976
Totals		6,451
American Board of Radiology		
Radiology		4,497
[illegible]		1,011
[illegible]		771
[illegible]		210
Therapeutic Roentgenology		5
Radium Therapy		8
Radiological Physics		58
X-ray and Radium Physics		17
Medical Nuclear Physics		6
Totals		6,583

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* Independent board established in 1949.

Table 1 contains a list of the approved specialty boards, the year of activation, and the total number of candidates certified through June 30, 1959. Data are also presented regarding the number of physicians certified in the subspecialties and those granted special certification by the boards in obstetrics and gynecology, otolaryngology, pathology, preventive medicine, psychiatry and neurology, and radiology.

A corrected total of 73,121 physicians was reported certified by the 19 specialty boards to July 1, 1958. From this date through June 30, 1959, 4,326 physicians were certified, bringing the total to 77,447 certifications on June 30, 1959. Forty-eight physicians were certified in the subspecialties, bringing that total to 1,626 on the same date.

Table 2 indicates the total number of physicians certified each year for the past 18 years by all specialty boards. The total number certified on June 30, 1959, was 77,447.

TABLE 2.—*Annual Specialty Board Certification, 1942-1959*

Year (Ended March)	No. of Boards in Existence	No. Certified	Cumulative Totals
1942	15	1,756	19,694
1943	15	2,172	21,866
1944	15	1,578	23,444
1945	15	1,308	24,752
1946	15	1,320	26,072
1947	15	2,424	28,496
1948	16	3,002	31,498
1949 (June 20)	19*	4,479	35,077
1950 (June 30)	19	3,827	39,804
1951 (June 30)	19	4,552	44,346
1952 (June 30)	19	4,118	48,464
1953 (June 30)	19	4,022	52,486
1954 (June 30)	19	4,133	56,619
1955 (June 30)	19	3,843	60,644
1956 (June 30)	19	3,083	63,727
1957 (June 30)	19	5,424	69,151
1958 (June 30)	19	3,970	73,121
1959 (June 30)	19	4,326	77,447

* One board, the American Board of Proctology, did not certify any candidates during this period.

The ninth edition of the "Directory of Medical Specialists," compiled by the Advisory Board for Medical Specialties and published in 1959 by the Marquis—Who's Who, Chicago, contains biographical information on the educational background of each living specialist including those retired from practice, certified by an American board.

AMERICAN BOARD OF ANESTHESIOLOGY

CURTISS B. HICKCOX, President, Hartford, Conn.
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STUART C. CULLEN, San Francisco
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MILTON C. PETERSON, Kansas City, Mo.
HARVEY C. SLOCUM, Washington, D. C.
SCOTT M. SMITH, Salt Lake City
FORREST E. LEFFINGWELL, Secretary-Treasurer, Pasadena, Calif.

REQUIREMENTS

Each applicant, before he shall become eligible for certification as a Diplomate in Anesthesiology, must satisfy the following requirements:

1. Have been graduated from a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association or have been screened by organizations acceptable to the Board.
2. Establish in a manner satisfactory to the Board, that (a) he is a physician duly licensed by law to practice medicine, (b) he has completed a satisfactory internship, (c) he is of high ethical and professional standing, and (d) he has received adequate special training in Anesthesiology.
3. Submit proof to the Board that he has limited his practice to Anesthesiology as a specialty for five calendar years, of which at least two have been training approved by the Board.
4. Prove to the satisfaction of the Board by such examinations and investigations as the Board may prescribe that he is qualified to practice Anesthesiology.
5. Personally prepare such case history abstracts of personally conducted procedures pertaining to Anesthesiology as the Board may specify.

Each applicant shall be classified for the purpose of examination and shall be examined in such a manner and under such rules as the Board may prescribe. The Board, acting as a committee of the whole, reserves the right to reject an applicant for any reason deemed advisable and without stating the same, and the action of the Board shall be final.

EXAMINATIONS

1. Written Examination: Eligible applicants may take this examination upon completion of two years of clinical training in a program approved by the Board. Written examinations are held annually in approximately 16 locations throughout the United States on the second Friday in July. Written examinations cover the basic and applied aspects of anatomy, chemistry and physics, pharmacology, pathology, and physiology. A passing grade, as determined by the Board, is required.
2. Survey Examinations: The Board may require a survey in addition to the letters and annual reports which it currently requires.
3. Oral Examinations: After limitation of practice to Anesthesiology as specified the candidate's qualifications are reviewed, and he may be declared eligible to appear for the oral examination. However, at least six months must elapse between the written and oral examination. Examinations are conducted semi-annually, in April and October. Examiners consist of Directors of the Board, and Diplomates who assist as associate examiners. Oral examinations cover all phases of Anesthesiology, including the basic sciences and clinical applications.
4. Practical Examination: Applicants are requested to submit to the Board annual reports of their anesthesia experience on forms provided by the Board. These reports covering the minimum number of years of clinical training and practice as prescribed must be filed with the Board in July of each year.

Applicants are entitled to three opportunities at yearly intervals to take the written examination. This three-year period begins on the date an applicant is first declared eligible for the written examination.

Oral examinations are given at six-month intervals. An applicant is entitled to one oral examination each year for a three year period.

In the event that a candidate fails an oral examination, at least 12 months must elapse before he may reappear for oral examination. The three-year period begins on the date an applicant is first declared eligible for the oral examination.

Failure to take an examination constitutes an opportunity just as much as failure to pass an examination. Under extenuating circumstances a candidate may apply for an extension of the three-year period by writing to the Secretary's office prior to the expiration of the three-year period. Under similar circumstances the Board, entirely at its discretion, may excuse a candidate from any scheduled examination without penalty, provided the request for such absence is filed prior to time of the examination.

A fee of $50 will be charged for each repeat in the written and oral examination. The Board may, however, at its discretion deny a candidate the privilege of reexamination.

If an applicant fails to pass either the written or oral examination within the allowed period, having taken one or more written or oral examination, his application will be declared void and reapplication will not be allowed.*

The Board reserves the right to limit the number of candidates to be admitted to any examination.

FEE

The fee shall be one hundred fifty dollars ($150). At least fifty dollars ($50) shall be paid upon filing the application, of which sum thirty-five dollars ($35) shall be returned if the candidate is not accepted for examination. The remainder ($100) shall be paid before taking the examination.

The Board is a nonprofit organization. The fees for examination and certification have been computed on a basis of cost of maintaining an administrative office and conducting examinations. The Board reserves the right to change the fee when necessary.

AMERICAN BOARD OF DERMATOLOGY

Marcus R. Caro, President, Chicago
Clinton W. Lane, Vice-president, St. Louis
Louis A. Brunsting, Rochester, Minn.
Edward P. Cawley, Charlottesville, Va.
Francis W. Lynch, St. Paul
Wiley M. Sams, Miami, Fla.
J. Walter Wilson, Los Angeles
Walter C. Lobitz, Jr., Assistant Secretary, Portland, Ore.
Beatrice Maher Kesten, Secretary, Office of the Board: One Haven Ave., New York

GENERAL REQUIREMENTS

Preliminary registration forms are acceptable after the applicant has met the following requirements:

1. High ethical and professional standing.
2. Graduation from a medical school approved, at the time of the candidate's graduation, by the Council on Medical Education and Hospitals of the American Medical Association. (Graduates of schools not on the approved list may be eligible provided they pass Part I and Part II of the examinations of the National Board of Medical Examiners.)
3. Satisfactory completion of an approved internship.
4. A state license to practice medicine in the United States or Canada issued following examination, or by endorsement of the certificate of the National Board of Medical Examiners, or regular status in the Armed Forces of the United States or Canada.
5. Citizenship in the United States or citizenship by birth in Canada.

SPECIAL REQUIREMENTS

The following minimum requirements have been established for admission to examination:

Formal training in dermatology and related subjects, of not less than three years. This training may be obtained as a resident, fellow, or graduate student in the institutions recognized by the Council on Medical Education and Hospitals of the American Medical Association and approved by the joint Residency Review Committee for Dermatology. One month in each year may be taken as a vacation. Vacations may not be postponed from one year to another. Candidates will be eligible for the written examination when a minimum of three full years have elapsed since the beginning of training.

The formal training shall include: At least one year full-time in an institution approved for three-year training in dermatology; graduate training in the basic medical sciences; and carefully supervised clinical and laboratory work.

METHODS OF TRAINING

The preferred method of training is a three-year well-integrated and continuing program in an institution approved for the full training period. At least one year of full-time training in an institution approved for three years is required.

However, apart from the required full-time year in such an institution, the additional training requirements may be fulfilled by training in institutions approved for one year or two years or in part as a preceptee.

Training must be completed within five years except where military service or other compelling circumstances shall intervene.

Suggestions for the study of Dermatology are given in the Syllabus of Graduate Training.

PERCEPTEESHIP TRAINING

Candidates may take one year of their training under the direction of a preceptor approved by the Board. Not more than half of each training day may be spent in the office of the preceptor; during the other half-day training must be undertaken in an approved institution. Although preceptorships may be taken during any one of the years of training, it is recommended that the preceptee have at least one year of dermatologic training previous to a preceptorship. After preceptees have become diplomates, they will be asked to fill out a Precepteeship Evaluation Form.

CREDIT FOR MILITARY SERVICE

Candidates who have served in the Armed Forces of the United States or Canada as physicians may submit credentials for possible credit toward training or experience. The Supplementary Application form for Military Training should be submitted with the Preliminary Registration form or at the termination of military services.

RESPONSIBILITY

It is the candidate's responsibility to make early contact with the Board, to ascertain and observe its regulations, and to file the preliminary registration and the application for certification forms. Candidates must meet all requirements before applying for certification.

Directors of training are responsible for submitting an Annual Graduate Training form on each candidate.

Approved preceptors, in conjunction with the director of training of the institution in which the candidate spends half his training time, are responsible for submitting an Annual Graduate Training form on each preceptee.

PRELIMINARY REGISTRATION

Each candidate must file a Preliminary Registration form with the Board at the beginning of training, whether or not plans are complete at the time. This establishes his identity and status as a candidate, and begins his permanent file. It enables the Board to detect any deficiencies in the plan of training. No fee is involved at this time.

ESTIMATES OF STATUS

Decisions as to the status of candidates who ask for an estimate of the further training needed can be made only by the Committee on Requirements upon submission of an Estimate of Status Form. The $25 registration fee, which will be credited toward the application for certification, must accompany this form. The Board acts as a body and through duly constituted committees. Individual members only carry out the rules and regulations of the Board.

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*The re-application privilege may still be granted those who filed their original application prior to February, 1958, if they submit proof of an additional year of approved clinical training.

APPLICATION FOR CERTIFICATION

Application for certification forms may be filed before the end of the formal training period and must be made before the closing date regularly published in the Examinations and Licensure column of THE JOURNAL of the American Medical Association. Dates of examinations are also published here. Applications should be filed during the last year of training in order to obtain full advantage of the loan sets of histopathology slides available from the Armed Forces Institute of Pathology. Application will be considered with the accompanying registration fee of $25, which will not be refunded. When all supporting documents have been received the application is submitted to the Committee on Requirements, which appraises the qualifications of the candidate and decides as to his eligibility for examination. An examination fee of $125 is payable when the candidate is notified that his application is acceptable to the Board.

The total fee of $150 has been carefully computed and is used entirely for administrative purposes. Members of the Board receive no compensation except for actual expenses connected with the examinations.

EXAMINATIONS

Examinations are designed to ascertain the breadth of the candidate's knowledge in the basic as well as the clinical aspects of dermatology and to test his familiarity with the literature and to gauge his general qualifications as a specialist in this branch of medicine.

All applicants for certification must now pass a comprehensive written examination before they are elibible for the oral test. The written examination is held simultaneously in major cities. Applicants are then required to pass the oral clinical and laboratory examination which is conducted in a clinic. Cases will be seen and discussed with each candidate, and the examiners will seek to ascertain his knowledge of dermatology as well as of various related subjects.

Candidates whose applications have been accepted may take the next examination after the completion of training. Except in special circumstances, an applicant shall take the examination within a year following the filing of application. A candidate once accepted for an examination will henceforth remain eligible for only two succeeding examinations, unless some compelling circumstance, such as military service, shall intervene.

Candidates who have signified their intention of taking the examination and who fail to appear, or who cancel their request after the final notice has gone out, shall forfeit the examination fee.

The Board's records are confidential throughout. Examination marks will not be divulged. The findings of the Board are subject to its discretion and are final. Applications are accepted on this understanding.

PRECEPTORS AND PRECEPTEE TRAINING

Preceptors are diplomates of the Board of at least five years standing in active practice, recognized teachers of professorial rank, on the active staff of an institution approved for three years of graduate training in dermatology.

Precepteeships are now granted for only one year of graduate training. The preceptee must not spend more than one-half of his time in the preceptor's office. The remainder must be spent under supervision in an institution approved for three years of graduate training in dermatology. His work program should be based on not less than a 40-hour week.

A Preceptee Work Plan is filed with the Secretary of the Board previous to acceptance of each preceptee. Following the preceptorship, the preceptor, in conjunction with the director of training of the institution in which the candidate spends half his training time, submits an Annual Graduate Training form on each preceptee.

Each dermatologist who wishes to become a preceptor must file an Application for Preceptorship form with the Board. (*The Committee on Education passes on these applications.*) Detailed qualifications, rules, and regulations as well as duties and rights of preceptors and preceptees will be sent to dermatologists on request.

The Booklet of Information, Syllabus of Graduate Training, Lists of Institutions Approved for Graduate Training and of Preceptors are available from the Office of the Board, 1 Haven Avenue, New York 32, New York.

AMERICAN BOARD OF INTERNAL MEDICINE

HOWARD P. LEWIS, Chairman, Portland, Ore.
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FRANKLIN M. HANGER, New York City
THOMAS A. WARTHIN, West Roxbury, Mass.
THOMAS FINDLEY, Secretary-Treasurer, Augusta, Ga.
VICTOR W. LOGAN, Librarian, Rochester, N. Y.

GENERAL QUALIFICATIONS

1. All candidates must be citizens of the United States or Canada. (For exceptions see "Graduates of Foreign Medical Schools not citizens of United States or Canada and returning to their homeland.")

2. All candidates must be licensed to practice medicine in a state, territory, province or possession of the United States or Canada.

3. All candidates must present evidence of satisfactory moral and ethical standing in the medical profession.

PROFESSIONAL QUALIFICATIONS

1. Graduation from a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association at the date of graduation.

2. Satisfactory completion of an approved internship of not less than twelve months.*

3. Satisfactory completion of residency training according to the following Plans A, B or C. (Graduates of foreign medical schools may qualify only under Plan A.)

QUALIFICATIONS FOR EXAMINATION

Plan A

Written Examination: A candidate may apply for admission to the written examination after five years have elapsed since the completion of an approved internship. Three of these years must be spent in a full-time formal training program planned as follows:

(1) Three years of residency or fellowship training in the broad field of internal medicine in a program approved by the Residency Review Committee in Internal Medicine of the Council on Medical Education and Hospitals of the American Medical Association,

or

(2) Two years of such residency or fellowship training and *one year in a field related to internal medicine* in any institution in the United States or Canada acceptable to the Board. This alternative year may be devoted to (*a*) basic or clinical research, (*b*) work in a basic science department, (*c*) sub-

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* During the period in which the 9-9-9 program was in effect an approved internship of nine months will satisfy the requirement of twelve months. A residency of nine months is considered as nine months only.

specialty training, or (*d*) formal training and study in an approved postgraduate medical school in the United States or Canada.

The remaining two years should be devoted to work in any clinical, investigative or basic science area related to internal medicine.

Obligated military service in the armed forces of the United States or Canada or the United States Public Health Service may be applied to this requirement of elapsed time but not to the three year period of formal training.

Oral Examination: The oral examination may be taken 12 months or more after passing the written examination. Candidates will be examined in the broad field of internal medicine without regard to specialty training. The Board has found that candidates do best when they have had wide clinical experience in the care of patients.

Plan B

Written Examination: If a candidate is unable to qualify under Plan A he may substitute continuous experience in the broad field of internal medicine at the rate of three years of such experience for each missing year of formal residency or fellowship training. He must also offer the two additional years of experience in an area related to internal medicine required by Plan A. Obligated military service may be applied as in Plan A. Thus, a candidate who qualifies under this plan with only two years of formal training will be eligible to take the written examination at the end of seven years after internship, and one with no residency training at all may qualify at the end of eleven years.

Oral Examination: The oral examination may be taken 12 months or more after passing the written examination.

Plan C

Written Examination: Plan C has been devised to broaden the opportunity for graduate education in terms of the requirements of this Board. *This plan is exclusive.* It is reserved for the use of *Chairmen of Departments of Medicine, in approved medical schools in the United States and Canada,* who may wish to recommend for admission to examination certain men who have planned a career in *academic medicine* but whose training has not satisfied the requirements of the other "Plans" authorized by the Board.

Candidates themselves may not elect Plan C. Specific recommendation that a candidate be qualified under this plan must be made by a *Chairman of a Department of Medicine in a Class A Medical School in the United States or Canada.* This recommendation must assure that the candidate has been under the jurisdiction and guidance of him or other persons whom he has selected or recommended during a five year period of training after internship; that this training has been shaped with the idea that the candidate has been preparing for an academic career; and that during the training period the candidate has had *adequate direct responsibility* for patient care in the broad field of internal medicine. Obligated military service, as described in Plan A, may not be included as a part of the five year period of training. This plan is intended for the unusual candidate. Each application will be considered individually by the Executive Committee of the Board.

If the candidate wishes to qualify after a minimum of five years of training, it will be the responsibility of the Head of the Department of Medicine concerned to affirm to the American Board of Internal Medicine that the candidate is qualified for admission to the examination. It well may be that the Head of the Department will require additional years of training beyond the minimum before recommending the candidate to the Board. A candidate qualifying under the foregoing provisions will be examined by the Board in the broad field of internal medicine.

The *Oral Examination* may be taken 12 months or more after passing the Written Examination.

Please see "definitions" as applied to the requirements of this Board.

GRADUATES OF FOREIGN MEDICAL SCHOOLS

GRADUATES OF FOREIGN MEDICAL SCHOOLS WHO ARE CITIZENS OF THE UNITED STATES OR CANADA AND LICENSED TO PRACTICE IN ONE OR MORE STATES OR PROVINCES IN THE UNITED STATES OR IN CANADA

REQUIREMENTS

1. All candidates in this classification must have passed the examination of the Educational Council for Foreign Medical Graduates and have received a permanent certificate. A photostatic copy of the certificate must accompany application for admission to examination.
2. Completion of an internship of one year approved by the Council on Medical Education and Hospitals of the American Medical Association.
3. Completion of the appropriate graduate training and subsequent experience in internal medicine after internship in accordance with the provisions of Plan A.
4. Two years of obligated service in the armed forces of the United States or Canada after internship may be applied in satisfying the time element but not the graduate training requirements.
5. A candidate may take the oral examination 12 months or more *after passing the written examinations.*
6. Please see "definitions" as applied to requirements of this Board.

GRADUATES OF FOREIGN MEDICAL SCHOOLS NOT CITIZENS OF UNITED STATES, WHO WILL RETURN TO THEIR HOMELAND AFTER COMPLETION OF AN APPROVED INTERNSHIP FOLLOWED BY THREE YEARS OF APPROVED RESIDENCY IN INTERNAL MEDICINE

1. Candidates in this classification are required to complete an internship of twelve months approved by the Council on Medical Education and Hospitals of the American Medical Association.
2. Candidates must have passed the examination of the Educational Council for Foreign Medical Graduates and have received a permanent certificate regardless of time or school of graduation. A photostatic copy of the certificate must accompany application for admission to examination.
3. Candidates are required to complete thirty-six months of approved residency after internship in accordance with the requirements of plan A.
4. At the expiration of this time candidates legally required to return to their homeland by December 30 of the year of completion of residency may apply for admission to the written examination of the Board which is held on the third Monday of October of that year.
5. Candidates who pass the written examination will receive from the Board a statement that they have passed the written examination and will be eligible to apply for admission to the oral examination after satisfying the remaining requirements under plan A. All examinations will be given in the United States.
6. Candidates passing the oral examination of this Board will receive from the Board a statement that they have passed the written and oral examinations of the American Board of Internal Medicine. This "statement" may take the form of a document suitable for framing.
7. The Board reserves unto itself the right to reject any and all applications.
8. All candidates must be citizens of the country to which they are returning and licensed to practice medicine in that country.
9. The "statement" referred to in paragraph 6 may not be exchanged for a certificate of the Board in the event the candidate should return to the United States or Canada and qualify for citizenship.
10. Please see "definitions" as applied to the requirements of this Board.

DEFINITIONS

As applied to Requirements of this Board

1. *An approved internship* is defined as an internship of not less than one year (rotating or straight internship in internal medicine) approved by the Council on Medical Education and Hospitals of the American Medical Association.
2. *An approved residency or fellowship* in internal medicine is defined as graduate training approved by the Residency Review Committee in Internal Medicine.
3. *Institutions recognized by this Board* are defined as:
   - *a.* All medical schools in the United States and Canada approved by the Council on Medical Education and Hospitals of the American Medical Association;
   - *b.* All hospitals approved for three years of residency or fellowship in internal medicine by the Residency Review Committee in Internal Medicine;
   - *c.* All state universities, colleges, recognized institutes for research and postgraduate schools of medicine, and schools of technology in the United States and Canada.
4. *Obligated military service* is defined as service under the requirements of an Act of Congress governing the "Doctors Draft".
5. *Graduate training* as referred to in the requirements includes an approved internship and approved residencies and fellowships.
6. *Postgraduate training* includes formal training and study in recognized graduate schools of medicine or basic science.

CREDIT FOR SERVICE IN THE MEDICAL CORPS OF THE ARMED FORCES OF THE UNITED STATES OR CANADA

Active duty as a commissioned officer in the Medical Corps for the periods Dec. 7, 1941, to Jan. 1, 1947, and June 1, 1950, to July 1, 1954, may be applied as one year of residency credit or one year of clinical experience regardless of assignment.

GRADUATES OF THE CHICAGO MEDICAL SCHOOL AND THE MIDDLESEX SCHOOL OF MEDICINE

Graduates of the Chicago Medical School prior to the approval of the Council on Medical Education and Hospitals of the American Medical Association in 1949, may apply under the provisions of plan A and at the discretion of the Executive Committee of the Board be admitted to examination.

Graduates of the Middlesex School of Medicine who received their degree in medicine prior to January 1, 1951, may apply under the provisions of plan A and at the discretion of the Executive Committee of the Board be admitted to examination.

PRINCIPLES OF TRAINING

The American Board of Internal Medicine is interested in the fact that the candidate has embarked on a career of study voluntarily and has thereby expressed the desire to excel and to participate personally in the world's progress in medicine.

Preparation must be based on years of continuous thoughtful study. Therefore, in suggesting a program for those who wish advice, the Board hopes to assist the candidates to avoid inferior and superficial programs which may lead to failure and disappointment in later years.

The Board believes that all internists should have a sound fundamental knowledge of Anatomy, Bacteriology, Biochemistry, Pathology, Pharmacology, and Physiology. Such knowledge is essential to the continued progress of any internist. The Board anticipates that adequate training will be obtained in the basic sciences as applied to internal medicine during a formal three year residency program.

The Board wishes to emphasize that time and training are but a means to the end of acquiring a broad knowledge of internal medicine which the candidate must demonstrate to the Board in order to justify it in certifying that he is competent to practice internal medicine as a specialty. The responsibility of acquiring the knowledge rests with the candidate. The responsibility of maintaining the standards of knowledge required for certification rests with the Board.

APPLICATION

Candidates for examination must make their application on a prescribed form which may be obtained from the office of the Executive Secretary-Treasurer.

Applications must be filed by May 1 of the year concerned. All requirements must be satisfied by October 1 of the year concerned.

The application must be accompanied by a recent, signed photograph of the candidate and the registration and examination (written) fee of sixty ($60) dollars. Forty-five ($45) dollars will be refunded if the application is disapproved.

The oral examination fee of sixty-five ($65) dollars is due when applying for admission to the oral examination.

The certificate fee of ten ($10) dollars is due after notification of certification is received.

If three or more years elapse before a candidate completes his certification, the Board will require the candidate to file a new application.

METHOD OF EXAMINATION

1. *The written examination* is held simultaneously in different sections of the United States, Canada, and outside continental limits of the United States wherever eligible candidates are located. Only one written examination will be given each year. This examination will be held on the third Monday in October. This examination is divided into morning and afternoon periods of three hours each. The questions are of the multiple choice type, framed in such manner as the Board elects, and designed to test the candidate's basic clinical acumen and his knowledge of applied physiology, anatomy, physiological chemistry, pathology, bacteriology, and pharmacology as related to internal medicine.

2. *The oral examinations* are held near the time and place of the annual meeting of the American College of Physicians and at such other times and places as the Board may designate. Announcement of all oral examinations will appear in the *Annals of Internal Medicine* and THE JOURNAL of the American Medical Association. *Applications will be accepted as soon as the schedule is announced and cannot be accepted after the closing date published.*

The oral examinations are given by the members of the Board with the assistance of such guest examiners as may be selected, and are conducted at the bedside of patients assigned each candidate.

Candidates will be expected to present in a concise, orderly fashion pertinent facts in the history and diagnosis. Demonstration of important physical findings will be requested by the examiner. During the oral examination, questions will be asked concerning diagnostic and therapeutic procedures related to the problems under discussion and to any other aspects of Internal Medicine. Conciseness and clarity of statement as well as evidence of clinical maturity will be searched for, in addition to factual knowledge. Furthermore, the candidate should be prepared to demonstrate his ability to interpret objective demonstrations of roentgenologic, pathologic, hematologic, electrocardiographic and other abnormalities.

RE-EXAMINATION—WRITTEN AND ORAL

I. *Written Examination*

1. The interval between written examinations will be not less than one year.
2. The number of written examinations for which a candidate may apply is not limited.
3. A fee of thirty-five dollars ($35) is due upon application for reexamination.

II. *Oral Examination*

1. The interval between oral examinations will be not less than one year.

2. Candidates failing the oral examination three times, must re-apply for admission to the written examination. After passing the written examination again, candidates become subject to the same regulations and priorities in respect to the oral examination as apply to candidates who pass the written examination for the first time.

3. A fee of sixty-five dollars ($65) is due upon application for reexamination.

III. 1. The effective date of the changes referred to governing re-admission to the written and oral examinations was February 1, 1958 and will apply to examinations taken after February 1, 1958.

NOTE: Candidates are not required to repeat the examinations within the specified time limits. A longer interval may be elected between both written and oral examinations. Candidates who elect an interval of three years or more between examinations must file new applications.

CANCELLATIONS

A candidate who cancels his assignment to an examination will be required to pay a special fee before admission to a subsequent examination. This provision becomes necessary because of the large number of cancellations after complete arrangements have been made and the expense incident thereto.

Written cancellation fee	$25
Oral cancellation fee	$65

SUB-SPECIALTY BOARD–ALLERGY

WILLIAM B. SHERMAN, Chairman, New York City
VINCENT J. DERBES, New Orleans
STANLEY F. HAMPTON, St. Louis
HOWARD J. LEE, Milwaukee
MAX SAMTER, Chicago

SUB-SPECIALTY BOARD—ALLERGY

1. Two years, full time, including training both in allergy and internal medicine in an approved allergy clinic and hospital; or

2. One year, full time, including training in allergy and internal medicine in an approved allergy clinic and hospital, and two additional years of attendance and participation at least two half days weekly at an approved allergy clinic; or

3. Five years of attendance and participation at least two half days weekly at an approved allergy clinic; or

4. Twelve years in the practice of allergy after fulfilling the professional qualifications for certification in internal medicine, with evidence of sustained scientific interest.

5. All candidates who desire consideration in allergy must be certified in internal medicine before applying for admission to examination in allergy.

6. The candidate should be prepared for oral and clinical examination in the anatomy, pathology, physiology, and biochemistry of reactions of hypersensitivity. This will include immunology, immunochemistry, atopy, allergy of infection, collagen disease, and experimental hypersensitivity. He should be proficient in clinical diagnosis, laboratory procedures and in the treatment of allergic diseases. He should be familiar with the physiology of respiration, especially as modified by bronchial asthma and pulmonary emphysema and with the pharmacology of drugs used.

NOTE: Fellowship or research assignments not approved by the Council on Medical Education and Hospitals will require certification by the chief of service that such assignment was equivalent in graduate training opportunities and patient responsibilities to that of an approved residency in allergy recognized by the Board. This certification must be presented before the application is filed.

SUB-SPECIALTY BOARD–CARDIOVASCULAR DISEASE

BRUCE LOGUE, Chairman, Atlanta, Ga.
CHARLES A. R. CONNOR, New York City
A. CARLTON ERNSTENE, Cleveland
FRANK B. KELLY SR., Chicago
J. MURRAY KINSMAN, Louisville, Ky.
RICHARD H. LYONS, Syracuse, N. Y.
RAYMOND D. PRUITT, Rochester, Minn.

SUB-SPECIALTY BOARD—CARDIOVASCULAR DISEASE

The applicant should be of good character and excellent standing in his community, as attested by letters from sponsors of known integrity.

The applicant should have reached a state of maturity, compatible with the acquisition of sufficient factual knowledge and experience to form a basis for sound judgment. The Board believes that only exceptional persons are sufficiently mature for this sub-specialty before the age of thirty-five years or less than ten years after graduation from medical school.

The Board will make exception to this general rule of admission to examination, under unusual circumstances, largely to avoid injustice to the younger men of outstanding ability.

The candidate must have given clear evidence of his deep and constant interest in cardiovascular disease over a period of years. The Board is particularly interested in recommending for examination those applicants whose records indicate that their interest in cardiovascular disease will probably be sustained throughout life, and that their knowledge of the subject will constantly grow. Achievements in the field of research are regarded as evidence of such interest, but publication of articles or prolonged training in research work is not considered essential. Consideration will be given to the circumstances of each applicant's training and experience; those who have been in communities and institutions which offered excellent opportunities for contributions to the knowledge of cardiovascular disease will be expected to have made such contributions. Consideration will be given to the difference in experience of those whose opportunities for research have been more limited.

In most cases, it is deemed essential that the candidate, after thorough training in internal medicine, shall have received at least one full year of postgraduate education in cardiovascular disease, preferably under the guidance of a person known to be experienced and sound. Qualifications will be appraised by the Cardiovascular Board and admission of the applicant to the examination will be determined by a majority opinion of the Board.

Every candidate admitted to the certifying examination in cardiovascular disease will be expected to possess specialized knowledge of the kind indicated below. This list is by no means complete; it is intended to indicate the nature, rather than the extent, of the knowledge every applicant should have. In terms of its scope it should be regarded as the minimum, not the maximum. Persons possessing special knowledge and training in peripheral vascular disease may be expected to have a higher standard required in the examination in that portion of the field than in the certain details of other branches of cardiology, and the converse may be similarly applied.

1. Full and accurate knowledge of the anatomy of the normal and diseased heart, including its relationships to the external chest and to the other mediastinal structures. A comprehensive anatomical knowledge of all important blood vessels, including their aberrant locations.

2. A thorough knowledge of the normal and pathological physiology of the heart and peripheral circulation.

3. Detailed knowledge of the diagnostic signs which permit the recognition of all important diseases of the heart and blood vessels, such as arteriosclerosis, arteriosclerotic heart disease, syphilitic heart disease, rheumatic heart disease, constrictive pericarditis, auricular and ventricular septal defects, coronary thrombosis with myocardial infarction, thromboangitis obliterans, Raynaud's syndrome, coarctation of the aorta, aneurysm, patent ductus arteriosus, periarteritis nodosa and lymphedema.

4. Familiarity with the special methods used in the study of diseases of the heart and blood vessels. In the case of the heart, these include such technics as electrocardiography, roentgenography, catheterization and angiocardiography; in the case of vascular disease, such technics as the use of the oscillometer and thermocouple, arteriography, and venography, reflex vasodilation, the cold pressor test, color changes with elevation, dependency, temperature, etc.

5. Accurate knowledge of the pathologic changes associated with the more important diseases of the heart and blood vessels sufficient to enable the candidate correctly to evaluate the pathologic condition from gross specimens or microscopic sections.

6. Fairly extensive and detailed knowledge of the pharmacology relating to heart and blood vessels. This must include full knowledge of the important relationship of the autonomic nervous system both to the heart and to the peripheral vessels, and the effects of stimulation or paralysis of the various parts of the autonomic system by drugs or by surgical methods. The candidate should be intimately familiar with the use and effects of such important drugs as digitalis, quinidine, heparin, papaverine, epinephrine, dicumarol, penicillin, diuretics, sedatives, etc.

7. A sound understanding of the indications for conservative therapy, as well as for surgical procedures, in cardiac and peripheral vascular diseases (patency of the ductus arteriosus, arteriovenous anastomoses, constrictive pericarditis, scalenus, anticus syndrome, etc.).

In summary, it is the desire of the American Board of Internal Medicine and its Sub-Specialty Board in Cardiovascular Disease that physicians shall not be admitted to the certifying examinations unless they have exceptional qualifications as individuals and as experts in this sub-specialty of medicine.

SUB-SPECIALTY BOARD—GASTROENTEROLOGY

Henry J. Tumen, Chairman, Philadelphia
H. Marvin Pollard, Ann Arbor, Mich.
Julian M. Ruffin, Durham, N. C.
C. Wilmer Wirts, Philadelphia
Eric E. Wollaeger, Rochester, Minn.

SUB-SPECIALTY BOARD—GASTROENTEROLOGY

A. *Professional Standing*

The candidate must submit at least three letters from recognized Internists. At least one of these should be from a qualified Gastroenterologist who has served as the candidate's preceptor during a significant portion of his training in Gastroenterology, or from the head of the Medical Department in which such training has been obtained. These letters should attest to the candidate's professional qualifications and ethical standing. They should also contain specific information regarding the degree of the candidate's specialization in Gastroenterology and the work that he has done in this field.

B. *Education*

1. The candidate must be prepared to demonstrate that he has special interest and ability in Gastroenterology and has adequate knowledge of all phases of this branch of Internal Medicine, including a sound understanding of the basic sciences underlying this specialty as well as proficiency in its clinical practice. He is expected to demonstrate familiarity with the literature of Gastroenterology and to show that he has kept abreast of recent developments in this field. The candidate also must submit proof of adequately supervised training in the recognized gastroenterologic procedures and in gastrointestinal roentgenology (film interpretation).

2. The candidate must present evidence of fulfillment of one of the following requirements:

(*a*) A residency or fellowship for at least one year in Gastroenterology in an institution approved for such training by the Sub-Specialty Board in Gastroenterology of the American Board of Internal Medicine. A residency or fellowship that includes a program of education in the basic sciences is highly desirable.

(*b*) A formal continuous graduate course in Gastroenterology full time for at least eight months in an institution approved for such training by the Sub-Specialty Board in Gastroenterology.

A shorter graduate course—not to exceed four consecutive months—will be considered equivalent to the same amount of time spent in an approved residency or fellowship in Gastroenterology, if taken in an institution approved for this purpose by the Sub-Specialty Board in Gastroenterology.

(*c*) In the absence of (*a*) or (*b*), attendance and active participation for at least five years in a gastrointestinal ward or clinic in connection with which a definite teaching program in Gastroenterology is being conducted under the supervision of a qualified Gastroenterologist.

3. If requirement (*a*) under the above heading has been met, only two years of (*c*) will be required.

If requirement (*b*) under the above heading has been met, only three years of (*c*) will be required.

C. *Practice*

At least 60% of the candidate's work must have been devoted to Gastroenterology for at least three years before application.

SUB-SPECIALTY BOARD—PULMONARY DISEASES

Julius L. Wilson, Chairman, Philadelphia
Theodore L. Badger, Boston
Alvis E. Greer, Houston
Carl Muschenheim, New York City
Arthur M. Olson, Rochester, Minn.

SUB-SPECIALTY BOARD—PULMONARY DISEASES

1. Candidates for certification in pulmonary diseases shall fulfill the requirements of the American Board of Internal Medicine as to:

(*a*) General qualifications
(*b*) professional education
(*c*) Special Training

2. In addition to the general requirements of the American Board of Internal Medicine, candidates shall:

(*a*) Have completed a special training period in pulmonary diseases to include at least a year's work in a tuberculosis hospital or a general hospital with facilities for the care of tuberculosis and at least another year in the *practice* of pulmonary diseases in such an institution or in association with an older man competent in this field.

(*b*) Submit an application to the advisory board in this specialty, which must be approved by all of the members of this Board.

(*c*) Pass the written and oral examination of the American Board of Internal Medicine.

(*d*) Pass the oral and practical examination in pulmonary diseases.

AMERICAN BOARD OF NEUROLOGICAL SURGERY

Leonard T. Furlow, Chairman, St. Louis
E. Jefferson Browder, Vice-chairman, Brooklyn
George S. Baker, Rochester, Minn.
Edwin B. Boldrey, San Francisco
Dean H. Echols, New Orleans
Edgar A. Fincher, Atlanta, Ga.
W. James Gardner, Cleveland
Edgar A. Kahn, Ann Arbor, Mich.
Frank Mayfield, Cincinnati
William T. Peyton, Minneapolis
John Raaf, Portland, Ore.
Donald D. Matson, Secretary-Treasurer, 300 Longwood Avenue, Boston

GENERAL QUALIFICATIONS

1. Moral and ethical standing in the profession satisfactory to the board of directors.

2. It shall be discretionary with the board to accept for examination candidates who have been in neurosurgical practice more than six years but whose formal training fails to meet full requirements.

3. Properly qualified candidates who are permanent residents in and citizens of other countries and are legally qualified to practice medicine there and who have received their training in neurological surgery in the United States of America or Canada may apply for certification by the American Board of Neurological Surgery.

4. A special certificate may be issued to foreign (not United States of America or Canadian citizens) candidates who have received their training in neurological surgery in the United States of America or Canada and who are returning to their own country at the end of their training period, upon passing successfully the regular examinations of the Board, without completion of the requirement of two years in the practice of neurological surgery. This special certificate shall be appropriately identified to distinguish it from the regular certificate of this board.

PRELIMINARY PROFESSIONAL STANDING

1. Graduation from a medical school that is acceptable to the American Board of Neurological Surgery.

2. (*a*) Completion of a surgical internship of not less than one year in a hospital acceptable to the Board, or its equivalent in the opinion of the Board, plus a period of graduate study of not less than four years beyond the year of general surgical training in an approved hospital, or in a recognized graduate school of medicine, acceptable to the American Board of Neurological Surgery. Of this training period, at least 30 months must be devoted to clinical neurological surgery. The training in clinical neurological surgery must be progressive and not obtained during repeated short periods in a number of institutions. It is necessary that at least two years of this training be had in one institution, and the board will not ordinarily approve periods of training in clinical neurological surgery of less than one year.

OR

2. (*b*) Completion of a rotating internship of not less than one year in a hospital acceptable to the Board or its equivalent in the opinion of the Board, plus a period of graduate study of not less than four years beyond the year of rotating internship in an approved hospital, or in an accredited school of medicine acceptable to the American Board of Neurological Surgery. Of this training a period of at least six months must be in an approved clinical program in general surgery, and at least thirty months must be devoted to clinical neurological surgery. The training in clinical neurological surgery must be progressive and not obtained during repeated short periods in a number of institutions. It is necessary that at least two years of this training be had in one institution, and the Board will not ordinarily approve periods of training in clinical neurological surgery of less than one year.

Furthermore, the candidate must prepare himself to pass a Board examination in general surgery, organic neurology, neuropathology, neuroanatomy, neurophysiology, and neuroradiology.

The Board does not accept training by preceptorship.

An additional period of not less than two years of satisfactory independent practice of neurological surgery.

The above represents only the minimum requirements of eligibility for examination for certification by the Board.

APPLICATIONS

An application on the official application blank in order to be considered at any meeting must be in the hands of the secretary-treasurer of the Board not less than six months before the date of such meeting.

PAYMENT OF FEES

The fee for certification shall be one hundred fifty dollars ($150). The candidate for examination, on filing his application, shall accompany it with an application fee of twenty-five dollars ($25). The application fee will not be returned even though the application for examination is denied. When notified by the Secretary-Treasurer that he is eligible for examination, he shall send the examination fee of one hundred twenty-five dollars ($125) to the Secretary-Treasurer at least two weeks before the date of the examination.

THE AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

F. Bayard Carter, President, Durham, N. C.
Robert A. Kimbrough Jr., Vice-president, Philadelphia
Herbert E. Schmitz, Vice-president, Chicago
Lawrence M. Randall, Assistant Secretary, Rochester, Minn.
Daniel G. Morton, Los Angeles
John L. Parks, Washington, D. C.
Conrad G. Collins, New Orleans
R. Gordon Douglas, New York City
Carl P. Huber, Indianapolis
Curtis J. Lund, Rochester, N. Y.
John I. Brewer, Chicago
Charles L. Buxton, New Haven, Conn.
Walter T. Dannreuther, Chairman, New York City
Robert L. Faulkner, Secretary-Treasurer, 2105 Adelbert Rd., Cleveland 6, Ohio

REQUIREMENTS

Each applicant, before he may become eligible to apply for examination, must establish the following facts:

1. The possession of the degree of Doctor of Medicine from an institution of learning approved by the Council on Medical Education and Hospitals of the American Medical Association.

2. That he is a physician of high ethical and professional standing duly licensed to practice medicine in the United States or Canada and is a member of a County or District Medical Society.

3. The completion of at least one year of intern service in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association. The Board accepts the fifth or "intern" medical school year required by some schools in lieu of the usual fifth or intern year of clinical training following graduation.

4. The completion of six years of training and practice after the first intern year to include three years minimum of progressive Residency Training in clinical obstetrics-gynecol-

ogy in approved institutions. Approved Preceptorship training may be substituted in part for Residency training as explained on pages 20 and 21. After July 1, 1962, this Board will not accept Preceptorships in lieu of approved, progressive Residency Training.

5. Following completion of acceptable training, two years of post-training practice, limited to the specialty, are required before application for examination can be made. Post-training practice may include practice within the specialty as an assistant or associate or independent practice. Periods of Residency in obstetrics-gynecology in excess of the required three years will not be accepted as a substitute for any part of the two required years of post-training practice except in the cases of men advancing from the Residency Training into full time faculty positions in Medical Schools and their affiliated hospitals.

6. That he is limiting his practice to obstetrics and/or gynecology and intends to continue to do so, except for possible military duty.

7. The Board conformed with the general acceleration in programs in medical education in that it will accept a period of nine "accelerated" months as an academic year in satisfying our requirements for each of three years of residency training. Such allowances can be made only for services during the wartime period of the official "accelerated program" and are not made for services before 1943 or after the discontinuance of this acceleration in 1946.

8. Applicants who possess a certificate from another Board may retain such certificate provided they agree to confine their future practice to obstetrics and/or gynecology.

9. The Board has ruled that physicians who accept male patients in their private or other practice, for operative or other care, cannot be regarded as specialists in obstetrics and gynecology, except by special ruling when this is related to active military duty.

10. This Board deprecates engagement in fields of practice other than that in which candidates profess to be specialists. The sole exception to this provision is that it is permissible for candidates and diplomates of the American Board of Obstetrics and Gynecology to participate in Emergency Care.

11. This Board will not accept applicants for examination who are not full citizens of the United States or of Canada. Foreign born applicants must have been certified by either the National Board of Medical Examiners or licensed to practice medicine in the United States or Canada, by a State or Provincial Board of Licensure. Notarized statements, not original citizenship papers, must be furnished when the application is filed attesting to the fact of full citizenship in the United States or Canada, if the applicant is foreign born. Further, there will be required a probationary period of at least three (3) years from the date of licensure in the practice of medicine in these countries before such a candidate may be admitted to examination.

SPECIAL CREDITS AND RULINGS

1. Physicians otherwise qualified, who were graduated before January 1, 1939, and whose required training was in obstetrics or gynecology alone, and who have confined their practice to obstetrics or gynecology for at least five (5) years immediately prior to application may be accepted for examination as candidates for certification in either obstetrics or gynecology. In all other respects requirements for eligibility remain the same as for those physicians graduated since 1939. At least a fundamental knowledge of both obstetrics and gynecology is essential regardless of whether a candidate's practice is limited to one or the other branch.

2. Basic science training should emphasize the relation of anatomy, pathology, physiology, biochemistry, and microbiology, to the application of surgical principles which are fundamental in all branches of surgery. More especially for this specialty there should be training in infertility, endocrinology, oncology, irradiation therapy, psychosomatic medicine and other nonoperative methods of diagnosis and treatment.

3. Since July 1, 1958, this Board has not allowed credit within the three years required training period for separately organized basic science courses which remove the candidate from clinical training in obstetrics and/or gynecology.

4. Training in abdominal surgery, in addition to the required three (3) years of training in clinical obstetrics and gynecology, is desirable and may be included in the total minimal six (6) years required after the intern year.

5. Applicants on service in obstetrics-gynecology under orders in hospitals of the Army, Navy, Air Force, and Public Health Service will receive residency training credit if such hospitals are officially approved for training in this specialty.

When the hospital is not approved, Preceptorship Training credit may be allowed if the service is supervised by a Diplomate of this Board or an otherwise qualified obstetrician and gynecologist. If such training credit is desired, candidates must comply with the regulation governing Preceptorships as published below. In addition, the Medical Officers Professional Training Record should be completed and attested while in military service.

Credit toward the required two years of post-training practice, limited to this specialty, will not be allowed for service in the Armed Forces except in the case of regular medical officers who have completed the training requirements.

APPLICATION AND FEES

Application must be made on a special blank which will be furnished by the Secretary's Office and must be forwarded with the other required credentials and the application fee to the Secretary's Office not later than August 1 of each year.

Candidates applying for admission to the examinations for certification are required to submit with their application an unbound typewritten list on 8½ by 11 paper of all their patients admitted to the hospitals where they practice, for the year preceding their application or the year prior to their request for reopening of their application, with the age, parity, diagnosis, pathological diagnosis, nature of treatment, and end result.

The list should conform to page 23 of Bulletin of the American Board of Obstetrics and Gynecology and be certified by the hospital librarian, administrator or superintendent.

The application fee is $35 and is not returnable.

The examination fee is $125, payable when the candidate is notified of acceptance for examination. This fee is not returnable after the candidate has been officially accepted by the Credentials Committee and notified to report for examination.

If the candidate fails the Part II examination on his original application, he may exercise the privilege of one re-examination (see Examinations, Part II) but will be required to pay a fee of $35 for such re-examination upon making request that his application be re-opened for this purpose.

The fees have been carefully computed on a basis of cost of examinations and are used entirely for administrative expenses. Examiners and Associate Examiners serve as such without compensation other than actual expenses.

APPRAISAL OF INCOMPLETE TRAINING

Many prospective candidates write the Secretary's Office outlining in their letters their training qualifications and asking informally if they are eligible, if this training has been sufficient and, if not, what is still lacking. Any candidate should be able to make a fair estimate of his eligibility after studying this Bulletin.

However, if the candidate wishes an informal evaluation of qualifications, a form "Application for Appraisal of Incomplete Training" should be requested from the Secretary of the Board. The request should be accompanied by a check for $15 to cover the clerical expense involved. Prospective candidates are reminded that this appraisal is not official and is subject to review and final decision by the Credentials Committee when they consider the application for admission to examination.

Appraisal of Incomplete Training forms should not be filed if Application for admission to examination has already been filed. This is unnecessary duplication.

Official interviews cannot be granted by the Secretary or other Directors of the Board unless requested by the Board.

Applicants declared ineligible for admission to examination may request re-opening of their application within two (2) years of the filing date without payment of an additional application fee. When a candidate requests that his application be re-opened, he must supply the Board with information to justify such further consideration. A request for the re-opening of an application declared ineligible by reason of insufficient training, non-limitation of practice, or similar items may not be approved in less than two (2) years, although application may be made as specified above to avoid payment of an additional fee. This approval time may be reduced under exceptional circumstances. The request must have adequate supporting evidence of additional training and experience to warrant reconsideration. Supplemental Training blanks should be used for such reports, and these will be supplied upon request.

After two ineligibility or postponement rulings on any candidate's application, an entirely new application must be submitted (with or without fee, according to current requirements) in order to bring data up to date. The essential feature of this should be evidence of additional training and experience.

Applicants declared eligible but who fail to exercise the examination privilege within three (3) years of the date of filing the application are required to file a new and current application and to pay a new application fee. Candidates should offer as sponsors or references, two Diplomates of this Board with whom they are presently in contact, rather than men under whom they served as Residents only. It is required that sponsors be from the candidate's community and currently acquainted with the candidate and his ability in his practice of the specialty.

When notice of acceptance for admission to examination has been received by the candidate it should be immediately acknowledged and the examination fee paid. Case reports must be forwarded to the Secretary within thirty (30) days.

EXAMINATIONS

Part I examinations are scheduled for January 15, 1960. Arrangements will be made for candidates to report in any convenient city where there may be a Diplomate of this Board to conduct or to supervise the written examination which will be sent out under sealed cover.

Special arrangement will be made through senior officers for conducting the written portion of the Part I examination for men in military service. Such candidates are requested to keep the Secretary's Office informed at all times of changes in their mailing addresses.

All applicants accepted for examination will be required to obtain a passing grade in both the written examination and a review of case reports (Part I), before becoming eligible for the oral-clinical and pathology examinations (Part II). The passing grade for the written examination and case reports is 75 per cent. A candidate whose grade in either or both falls below 75 per cent is conditioned. Re-examination for the removal of conditions in Part I may be taken after one year but within three years after the first failure, without payment of an additional fee.

Requests for re-examination in the written portion of Part I and requests for resubmission of case reports must be filed prior to August 1 of each year.

Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held later in the year.

Requests for re-examination in Part II must be made prior to August 1 of each year.

Candidates appearing for re-examination under a new application after two previous failures will not be required, if they have passed all or part of the Part I examinations of their first application, to repeat such examination items already successfully cleared.

PART I

Examination consists of:

1. A comprehensive written examination, conducted annually, including questions on both obstetrics and gynecology and related basic sciences. The written examination will be limited to a maximum period of three hours.
2. The evaluation of twenty (20) important obstetrical and gynecological case reports in condensed form. Five (5) of the twenty (20) cases may concern major illnesses not necessarily operative. These reports must include a variety of material rather than a number of reports of one type. Case reports from one's Residency service shall not be more than five (5) in number.

CASE REPORTS

In the case of candidates applying for unilateral certification, case reports must pertain to the branch for which application is made.

Candidates holding full-time Medical School faculty appointments may submit the remainder of their case records from this full-time, non-private practice, but post-training service. (See Requirements.) The candidate should prepare and maintain in his possession a carbon copy of his case records in case of possible loss in shipping.

Evidence of adequate follow-up examination pertinent to each individual case must be submitted.

The candidate should submit separate verified index lists, in duplicate, for each individual hospital at which operations were performed. All of these must be formally signed by the responsible hospital official (preferably the hospital superintendent), attesting in each instance that the candidate was the operator.

In the upper left-hand corner of each index sheet there should appear:

Candidate's Name; and Name and Address of Hospital.

The data for each patient should be tabulated horizontally, reading thus:

1. Sequence number of case report (1 to 20).
2. Whether patient was from the candidate's Residency service or his own private or ward practice, as follows: "Res. Serv." or "Own Practice." All records failing to have this information will not be considered acceptable.
3. Patient's name or identifying initials, age, parity.
4. Date of patient's admission and hospital admission number.
5. Date of patient's operation.
6. Date of patient's discharge.
7. Dates of follow-up examinations.

At the foot of each index sheet should be placed the attested statement of the hospital official, referred to above. This statement should read as follows:

> This is to certify that the above listed case reports have been verified by me from the records of this hospital and these patients operated upon in this institution by Dr. ....; that the admission number and dates specified are correct. This is further to certify that the reports given the follow-

ing sequence numbers (......... to .... inclusive) were from the Residency service of the aforementioned physician and the reports given the following sequence numbers (......... to .... inclusive) were from his own practice (ward or private) in this hospital and that in all instances he was the chief operator.

....Signature

....Official Title

Date..

Each case report should be typewritten on standard size paper, 8½ x 11 inches, and those reports then assembled in sequence. Covers should not be used for separate reports, as this increases their bulk unduly. Reports should be bound loosely together in a light outside cover not larger than 10 x 12 inches, so that they may be opened and held like a book. The following items should be observed:

1. Each case report should be headed by identifying information corresponding with that of the index lists, including sequence number, designation as a "Residency" or "Own Practice" case, and so on.

2. The report of the case should begin with:
   (*a*) Preoperative diagnosis.
   (*b*) Postoperative diagnosis (based on findings).

3. The report should be in condensed form, not reported in detail. Follow-up findings of not less than six (6) months are essential. Omissions of follow-up examinations must be explained and justified.

4. Obstetrical reports which do not include essential pelvic measurements and note of methods used, will be considered incomplete. Surgical reports should contain description of the operation and the reason for selection of the procedure.

5. Each report must conclude with a critical analysis. When this is omitted the report will be considered incomplete and will not be acceptable. Candidates will not be admitted to the written examination unless the case records previously have been submitted.

6. Considerable time is necessary to grade the examination papers and case records. Accordingly the results will be announced as soon as is consistent with careful evaluation.

PART II

The oral-clinical and pathology examinations given all candidates are conducted by the entire Board and the Associate Examiners. Advance announcements of examination dates and place will be made in medical journals throughout the country. (Scheduled for Chicago, April 11 to 16, 1960.)

Examination consists of:

1. Oral examination before three or more examiners.

An endeavor is made to adapt the details of the oral examination to each candidate's experience and practice. The examination is particularly directed to ascertain his familiarity with recent obstetrical and gynecological literature, the related basic sciences, the breath of his clinical experience, and his general qualifications as a specialist in obstetrics and gynecology.

2. Pathology examination.

The candidate is expected to identify and to discuss pathologic specimens and microscopic sections.

Examiners report orally upon each candidate to the assembled Board, after which the results of their investigations are considered jointly by the entire Board and Associate Examiners. After a general consideration of the details of the candidate's oral and pathology examinations, including a review of his capability and general adaptability, the candidate is passed or failed by the entire Board of Directors.

The final action of the Board is based upon the candidate's ethical and professional record, training and attainments, as well as on the results of his formal examination.

When a candidate fails in Part II of the examination, he is not required to repeat Part I, but is required to repeat Part II only. One re-examination may be taken within three (3) years of the original examination and first failure without formal reapplication papers. Request for reopening of the candidate's original application must be filed with a re-examination fee of $35 (See Application and Fees). Application for re-examination in Part II must be made by the candidate prior to August 1 of each year. Data regarding additional training or experience and Medical School or hospital appointments acquired in the interim must be cited in the letter and verified on a Supplemental Training Form obtained from the Office of the Secretary of this Board.

The candidate may be allowed to reappear at the examination following the one failed by him. The Board may, at its discretion, deny the candidate the privilege of re-examination.

Failure to exercise the privilege of re-examination within three (3) years, entails the filing of a new application with the usual application and examination fees.

After two failures in either Part I or Part II on the first application, the candidate may reapply with a new application and reapplication fee of $35 and re-examination fee of $125 and be readmitted to examinations once only. Exceptions to this ruling can be made only by action of the entire Board of Directors in annual session, usually to be based upon evidence of additional training and experience sufficient to warrant such action.

GRADUATE TRAINING RESIDENCIES

This Board, through the Council on Medical Education and Hospitals of the American Medical Association, has approved institutions providing acceptable residencies in obstetrics and gynecology.

The American Board of Obstetrics and Gynecology has established the following requirements for its approval of a residency in a hospital department or service:

1. It is most desirable that the Chief of Service of the Department be certified by the Board, in the interests of the proper teaching of the specialty of obstetrics and gynecology. In lieu of such certification the Board will approve of individuals of recognized high professional standing in the specialty. At least one additional senior member of the staff should be similarly qualified.

2. Exceptions to the foregoing, in respect to the certified status of Chiefs of Service and others as outlined above, can be made by assent of the Committee on Residency Training, for adequate and justifiable reasons. As examples of the latter, the degree of F. A. C. S. in obstetrics-gynecology may be accepted in lieu of one of the two required certifications if the general reputation of the person concerned is known to the Committee as national or sectional in scope, or a professorial rank without certification might be acceptable.

3. In instances where the services of obstetrics-gynecology are not combined but are separate in any given hospital, the Chief of each such service seeking approval and at least one of his subordinates must be certified or otherwise qualified as outlined above. If obstetrics and gynecology are not combined in one department, approval can be granted only if arrangements are made for some degree of rotation of residents between both services, provided both services are separately approved.

4. If gynecology is classified in the given hospital as a subdivision or subservice of general surgery, approval cannot be granted for residency training in gynecology. Exceptions have been made if the subdivision of Gynecology is headed and staffed by a Chief and at least one other certified by this Board or otherwise qualified as specialists in obstetrics-gynecology, as specified above, thus ensuring an acceptable educational program in obstetrics-gynecology.

5. Departments holding official approvals for residency training are cautioned that their totals of residents appointed must be kept to the number specified in the A. M. A.-

American Board approval notification. Dilution of training facilities by unauthorized appointment of residents in excess of these numbers may be cause for reinspection and changes in approval status of such hospitals and their special services.

6. For further details of requirements and qualifications for approval for residency training, hospital officials should refer to the latest special issues of THE JOURNAL of the A. M. A. as they appear during each year, dealing with these subjects, or should apply to the Council on Medical Education and Hospitals of the A. M. A. for bulletins entitled "Essentials of Approved Residencies and Fellowships."

7. Application for residency approval must be made in triplicate on special forms provided for this purpose. These forms may be obtained from the Secretary of the Council on Medical Education and Hospitals of the A. M. A. All statements amplifying an application should also be made in triplicate. The hospital should keep a duplicate of all papers.

8. The formal application, with all papers, for residency training approval should be submitted primarily to the Council on Medical Education and Hospitals of the A. M. A., 535 North Dearborn Street, Chicago 10, Illinois. Action is taken jointly by the Council and this Board after survey by the Council.

9. Approvals are granted according to adequacy of the training program and teaching facilities of various institutions on the following several bases: (*a*) one-year approval in obstetrics and gynecology (combined) or one-year approval in obstetrics and/or in gynecology (separate), correlated basic science instruction being an essential part of the first year; (*b*) two-year approval in obstetrics and gynecology (combined) or two-year approval in obstetrics and/or in gynecology (separate), provided there is opportunity in the latter instances for some degree of rotation between the two services as well as laboratory instruction in basic sciences; (*c*) three-year approval in obstetrics and gynecology (combined) or in obstetrics or in gynecology, provided there is opportunity for one to one and one-half years' service in the branch of the specialty opposite to that in which the candidate holds appointment, as well as laboratory instruction in the basic sciences of both branches.

Exchange residencies within the specialty between approved institutions are acceptable and to be encouraged. Many authorities believe that training in more than one institution is broadening to the candidate. "Farming out" to unapproved institutions or services is not acceptable unless the work of such services is directly and carefully supervised by the Chiefs of the service in the approved hospital under which the man is actively appointed and working. This should be attested by such Chiefs.

Exchange residencies into other specialties cannot be permitted to subtract from the minimal required three (3) years of training divided between obstetrics-gynecology. As noted elsewhere in the Bulletin two (2) years of post-training practice limited to the specialty is necessary before a candidate may apply for examination. This Board has no objection to residency services being arranged by hospitals for periods longer than three (3) years, unless this dilutes the candidate's clinical training opportunities too much during the first three (3) years. However, the Board does not accept a fourth year, or more, of residency training as a substitute for any part of the required two (2) years of post-training practice.

The importance of post-training practice in the specialty is emphasized as an opportunity for maturing of the candidate and for colleague appraisal of a man's ability when working on his own responsibility in his chosen community.

Exception to this ruling may be made for men advancing from their training into and planning to remain in full-time teaching positions. These men then must complete at least two (2) years in such positions. Consequently the only institutions in which men may work as fourth and fifth-year residents and obtain credit for this time as "post-training practice" are those directly affiliated with approved Schools of Medicine as teaching hospitals for undergraduate instruction. These "full-time" men must hold faculty appointments, must have teaching duties with undergraduate students, must be given independent authority more than that of residents, and must make a declaration of intention to remain in full-time teaching work.

10. Any physician formally obligating himself to serve a residency in a Council on Medical Education and Hospitals of the American Medical Association-American Board of Obstetrics and Gynecology approved hospital and thereby eliminating other possible candidates from the position, who breaks his contract without justifiable cause, either before beginning his service or during his period of service, except by mutual consent and agreement between the candidate and the hospital, may be barred from the examinations for certification at the discretion of the Board.

PRECEPTORSHIP TRAINING

Preceptorships initiated after July 1, 1958 must have been preceded by two (2) years of formal training in an institution approved for Residency training in obstetrics and/or gynecology. Candidates who propose Preceptorship Training must notify the Secretary of the Board of such intent and request an application form. When this has been completed, signed by the Preceptor and Preceptee and returned to the Secretary, it will be submitted (as has long been true of Residency Training Programs) to the Residency Training Committee of the Board for their decision. The request should be accompanied by a check for $35 to cover clerical expense involved.

If the program is approved the Preceptor must supervise closely the candidate's work and keep an informative record of the candidate's performance. The Preceptor and the Preceptee shall report in writing to the Secretary of the Board at the end of each six months of Preceptorship, outlining the progress of the training program. This information will be placed in the candidate's application for admission to examination in order that it may be evaluated by the Credentials Committee. Failure to fulfill these requirements after due warning by the Secretary will result in termination of the Preceptorship.

As a general rule each year of Preceptor Training will receive a six months' credit toward the total of three years of training necessary for admission to examination. As is the case with candidates whose training has been entirely by formal Residency, each application will be evaluated finally by the Credentials Committee.

An acceptable Preceptor preferably shall be one certified by the American Board of Obstetrics and Gynecology and must have been certified for a minimum of five years. Fellowship in the American College of Surgeons or long experience and established reputation as an obstetrician-gynecologist without either of the above qualifications may qualify the Preceptor.

Preceptor and Preceptee must work in a hospital approved by the Joint Commission on Accreditation of Hospitals.

The post-training practice requirement cannot be carried on concurrently with Preceptorship Training.

After July 1, 1962, this Board will require a minimum of three (3) years of approved progressive Residency Training to fulfill the requirements for admission to examination. After the above date training by Preceptorship will no longer be acceptable. Therefore the initiation of Preceptorships will not be approved after July 1, 1960.

AMERICAN BOARD OF OPHTHALMOLOGY

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PREREQUISITES

1. High ethical and professional standing.
2. Full citizenship in the country where the candidate practices. (Limited to countries of North and South America, their possessions and territories, and the Philippine Republic.)
3. A degree from a medical school of high standing, satisfactory to the Board and approved by the Council on Medical Education and Hospitals of the American Medical Association.
4. Completion of an internship of not less than one year in a hospital approved by the same Council.
5. Completion, by the time of the Written Qualifying Test, of not less than 36 months (a total of 60 months is required of candidates practicing both ophthalmology and otolaryngology) of combined study, training, and practice of ophthalmology in approved medical schools, hospitals, clinics, dispensaries, laboratories, and private practice.

APPLICABLE TO APPLICANTS WHO START RESIDENCIES IN OPHTHALMOLOGY AFTER DECEMBER 31, 1956

Individuals who have completed three years of formal ophthalmological training (residency and basic science courses) may apply for the written qualifying test after completion of 12 months of practice or 12 months of institutional work, a total of 48 months. All other individuals, with less formal training, may apply for the written test after 60 months in ophthalmology or 72 months of combined ophthalmology and otolaryngology. A basic course is recognized as equivalent in time to residency training. All time requirements must be completed by the date of the written test.

CASE REPORTS (EFFECTIVE IN 1960)

Every applicant for the 1961 written qualifying test must submit with his application certified reports of fifteen cases of major surgery performed by himself. These cases should be of diversified nature and must be prepared in accordance with instructions to be published later, and certified by the hospital where surgery was performed.

GENERAL REQUIREMENTS FOR ALL CANDIDATES

1. Application forms must be filled out completely and accurately. Letters of endorsement, together with any other required credentials, must be sent to the Secretary's office before the published deadline date.
2. Fee of $100.00 remitted with application.
3. A list of papers or books published.
4. Written qualifying test.
5. Practical examination.
6. Special review of ophthalmic surgery.
7. Licensure in the state, province, or country where the candidate practices.

SPECIAL TRAINING

This shall include:

1. Graduate study of the basic medical sciences which are fundamental to the intelligent practice of ophthalmology, particularly: anatomy, histology, embryology, optics, physiologic optics, visual physiology and psychology, pathology, bacteriology, pharmacology, disorders of ocular motility and binocular vision, perimetry, and in the skillful adjustment and use of instruments such as the ophthalmoscope, retinoscope, slit lamp, and microscope. Mere factual knowledge is not sufficient; the candidate must have had training in the application of these subjects and in their use in clinical ophthalmology, especially in refraction.
2. Active clinical experience in approved hospitals, clinics, dispensaries, and private practice. Library and laboratory facilities should be utilized for the intensive study of cases.

WRITTEN QUALIFYING TEST

Before being accepted for examination, candidates are given a Written Test to ascertain their qualifications. The questions may cover any part of ophthalmology and are especially devoted to the subjects listed on pages 6 and 8. The Written Test will be given in several principal cities at the same time. Choice of cities is determined largely by the geographical distribution of candidates. Candidates found acceptable will be notified to appear for a subsequent clinical examination in ophthalmology.

FEES

For original written test, $100, payable with application.

For original clinical examination, $50, payable on successful completion of the written test.

Repeating written test, $65.

Repeating clinical examination, $65.

Single conditions, $25.

Two or more conditions, $35.

Written qualifying test must be taken within three years of date of application. Thereafter new application and fee are required.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY

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REQUIREMENTS FOR PART 1 EXAMINATION

1. Citizenship in the United States or Canada, or possession of papers showing intent to become a full citizen.
2. Graduation with a degree of Doctor of Medicine from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association or graduation from a foreign school on the list of institutions surveyed by the aforementioned Council at the time the application is received.

Note: Graduates of foreign medical schools not on the list of the Council who pass the examination of the Educational Council for Foreign Medical Graduates will be acceptable to the Board on the same basis as others possessing the degree of Doctor of Medicine as herein stated. Send inquiries to the Educational Council for Foreign Medical Graduates, 1710 Orrington Ave., Evanston, Ill. The Board will not accept completion of the examinations of the National Board of Medical Examiners in lieu of the examinations of the Educational Council for Foreign Medical Graduates.

After 1960 the list of approved foreign medical schools will be discontinued by the Council on Medical Education and Hospitals, and every foreign graduate will be required to pass the examination of the Educational Council.

3. Completion of an internship of not less than one year in a hospital approved at that time by the aforementioned Council, or if trained abroad, in institutions considered satisfactory by the American Board of Orthopaedic Surgery.

4. Completion, in addition to the above, of one year of resident training in general surgery in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association.

NOTE: This minimum year of training in general surgery may also be satisfied in one of the following alternate ways, subject to approval by the American Board of Orthopaedic Surgery, and can be accomplished at any time during the total period of residency training.

(*a*) A second year of surgical internship.

(*b*) Time spent in supervised research pertaining to orthopaedic surgery.

(*c*) Time spent on services which have overlapping interest with orthopaedic surgery.

(*d*) A fourth year of orthopaedic training, consisting of either 12 months of adult orthopaedic surgery or 6 months of such surgery and 6 months of fractures and related trauma.

(*e*) Surgical work in private practice—candidates will present a list of independent surgery prepared by the hospital record librarian and supplemented by letters from at least two colleagues evaluating their experiences.

(*f*) Surgical work in military service—credit is granted only after termination of military service and presentation of the Professional Training Record and letters from Chiefs of Services.

5. Two of the required three years of resident training in orthopaedic surgery under a program appoved by the Residency Review Committee. (See list of appoved services in the Internship and Residency Number of THE JOURNAL of the American Medical Association.)

FILING OF APPLICATION FOR PART 1 EXAMINATION

1. Application blanks for this examination are obtainable from the office of the Board. They must be returned to the office before November 30 of the year preceding the examination and must be accompained by the registration fee of $15, a nonrefundable fee.

2. The Committee on Eligibility is the sole arbiter in deciding whether the application is acceptable or not. Questions only as to rules and procedures may be answered by the Secretary.

3. Notification of acceptance is mailed to eligible applicants in February of the year of the examination.

4. A fee of $40 is payable on receipt of said notification. The fee is not refunded if the candidate fails to appear at the scheduled examination, unless in response to his written request the Committee on Eligibility rules otherwise.

5. An application which has been accepted by the Committee on Eligibility remains valid for three years, after which time a new application and fee are required.

6. The date and place of the scheduled examination are announced in THE JOURNAL of the American Medical Association and also in the Journal of Bone and Joint Surgery. The examination is usually held in April in three cities strategically located in the eastern, central, and western sections of the country.

SCOPE OF PART 1 EXAMINATION

The examination is in two parts—written and oral.

The written part covers such subject matter as: fundamental principles of surgery, elementary fractures and related trauma, orthopaedic surgery, history taking, physical diagnosis and also anatomy, pathology, and physiology and biochemistry, insofar as related to the Specialty.

The oral portion covers the following five subjects: (1) anatomy; (2) pathology; (3) physiology and biochemistry; (4) surgery, and (5) fractures, related trauma and orthopaedic surgery.

RESULTS OF PART 1 EXAMINATION

1. Notification of the results of the part 1 examination is mailed by the Secretary of the Board to both successful and unsuccessful candidates.

NOTE: No information respective to the results is obtainable prior to the date of said notification. Furthermore, no certificate is issued to successful candidates of part 1 examination, and no details as to the grading of integral parts of the examination are made available to either applicants or diplomates of the Board.

2. Successful candidates may make application to the Board for admission to the part 2 examination, as explained in Section VII.

3. Unsuccessful applicants may repeat the part 1 examination in each of the two ensuing years, as necessary, and may do so without additional training requirements or the filing of a new application. They are, moreover, automatically reconsidered for examination by the Committee on Eligibility during the additional two years their application remains valid.

4. On receipt of the Committee's approval of his eligibility to repeat the examination, the applicant must pay to the Board the fee of $40.

5. After the third and subsequent failures to pass the part 1 examination, the Committee on Eligibility may require the unsuccessful candidate to obtain the equivalent experience of one year of residency training acceptable to the Committee. A new application with a fee of $15 must then be submitted for each additional examination, and this must, in turn, be followed by payment to the Board of the fee of $40 on receipt of notification from the Committee.

REQUIREMENTS FOR PART 2 EXAMINATION

NOTE: Successful completion of the part 1 examination does not automatically enjoin the Board to declare the candidate eligible for the part 2 examination. Certain additional requirements as well as the approval of the Committee on Eligibility are requisite.

1. Part 2 examination must be taken within the five-year period following completion of the part 1 examination. After this lapse of time it will be necessary to take the part 1 examination over again before eligibility for the part 2 examination can be considered. In some cases the Committee on Eligibility may extend this time beyond five years because of problems presented by service in the military forces.

2. The FORMAL REQUIREMENTS leading to either "full" or "limited"* Certification by the Board are as follows:

(*a*) Full citizenship in the United States or Canada.

(*b*) License to practice medicine in the United States or Canada.

(*c*) High ethical and professional standards and satisfactory moral standing in the community.

3. TRAINING REQUIREMENTS.—The requirements for "Full Certification" (including the training completed prior to part 1 examination) are as follows:

(*a*) One year of general surgery or its equivalent.

(*b*) One year of adult orthopaedic surgery.

(*c*) Six months of fractures and related trauma.

(*d*) Six months of basic science training.

(*e*) One year of children's orthopaedic surgery.

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*Training leading to Limited Certification will be discontinued after Jan. 1, 1962.

NOTE: The training requirements for "Limited Certification" are identical with those for "full certification" except for the one year devoted to children's orthopaedic surgery. In its stead there is in addition to the above requirements—items 3a through 3d—a choice between the following two alternatives:

(*a*) Twelve months of training in adult orthopaedic surgery, or

(*b*) Six months of training in adult orthopaedic surgery and six months in fractures and related trauma.

PRACTICE REQUIREMENTS

These are:

(*a*) All practice requirements must be satisfied after completion of the formal training requirements.

(*b*) Practice must be limited to orthopaedic surgery for two years, except as other therapy may be required in the care of patients on emergency services.

(*c*) Candidates in private practice must spend 14 of the 24 months immediately prior to application for the part 2 examination in one locality to permit the Committee on Eligibility to evaluate the candidate's competence in practice.

(*d*) A candidate employed full time in institutions may satisfy practice requirements by serving a minimum of two years. The minimum requirement of two years of practice limited to orthopaedic surgery cannot be satisfied by mixing full time institutional work with preceding or subsequent time in private practice unless the Committee on Eligibility rules otherwise.

FILING OF APPLICATION FOR PART 2 EXAMINATION

1. Applications for admission to the part 2 examination must be received in the office of the Secretary of the American Board of Orthopaedic Surgery before August 15 of the year preceding the examination. Each application must be accompanied by payment of the nonrefundable fee of $15.
2. An application remains valid for three years, after which time a new application and fee must be submitted.
3. On notification from the Committee on Eligibility of approval of the candidate's application, a fee of $75.00 must be paid to the Board. The notification is mailed out by the Secretary during the month of November preceding the part 2 examination.
4. Failure to appear for the scheduled examination entails forfeiture of the fee unless upon written request from the candidate the Committee rules otherwise.

SCOPE OF PART 2 EXAMINATION

1. The examination consists of two parts—written and oral.
2. The written part covers advanced work in all phases of orthopaedic surgery and trauma related to the muscular skeletal system in which the candidate has been trained.
3. The oral portion covers the following five items: (1) anatomy; (2) pathology; (3) children's orthopaedic surgery; (4) fractures and related trauma, and (5) adult orthopaedic surgery.

NOTE: Candidates for "limited certification" will not be examined in children's orthopaedic surgery, but will be tested personally in adult orthopaedic surgery and fractures and related trauma by two different groups of examiners.

RESULTS OF PART 2 EXAMINATION

A.—Successful Candidates

1. Candidates who have successfully passed the part 2 examination and who are otherwise acceptable to the Board on the basis of full requirements, receive appropriately a "full" or a "limited" certificate, stating that they have been found qualified to practice the Specialty of Orthopaedic Surgery in those fields in which they have been trained and examined.
2. Candidates who obtain "limited certification" are expected to delete children's orthopaedic surgery from their practice because of lack of approved training. They may subsequently become fully certified by completing one year of approved resident training in children's orthopaedic surgery and passing the Board examination in that field. A practice period of one year should intervene between the completion of the additional training and the examination. The examination fee is $25.00.

B.—Unsuccessful Candidates

1. Candidates unsuccessful in the part 2 examination are so informed by the Secretary. The grades received on integral parts of the examination are not revealed either to the candidate or to diplomates of the Board.
2. Candidates who fail one oral examination or the written examination will be required to repeat this portion of the examination within three years upon payment of a fee of $25.
3. Candidates who fail two oral interviews or one oral and the written test must repeat the entire examination as described in paragraph four.
4. The examination may be repeated on two subsequent occasions without requirement for further training or the filing of a new application. The eligibility of the candidate for reexamination receives automatic consideration from the Committee, and the results will be made known to him. On notification of his approval by the Committee on Eligibility, payment of the fee of $75 must be made to the Board.
5. After a third or subsequent failure to pass part 2 examination, the candidate may apply to the Committee on Eligibility for permission to repeat the examination. The Committee may require the candidate to gain additional experience equivalent to one year of resident training. A new application and fee of $15 must be submitted for each additional examination and this must be followed by payment to the Board of the fee of $75 on receipt of Committee approval of the candidate's eligibility.

MILITARY SERVICE

1. Medical officers who have elected service in the military forces as their life career compete for certification on the same basis as do doctors in civilian practice; that is, they must satisfy the practice requirements by military assignments in which their duties are limited to the practice of orthopaedic surgery.
2. Medical officers on temporary or permanent status with the armed services who serve in military hospitals approved by the Residency Review Committee, obtain credit on the same basis as do residents on approved services in civilian hospitals.
3. Applicants who serve in military hospitals not approved by the Council for resident orthopaedic training, but whose experience is judged by the Board to have been equal to that obtained on the approved orthopaedic programs, may be granted the maximum credit of one year of resident orthopaedic training.
4. Applicants requesting such credit must submit completed "Professional Training Records" in addition to lists of operations performed by them, and letters from Chiefs of Services with evaluations of their experience.
5. Medical officers assigned to residency programs in civilian institutions on the approved list for orthopaedic training receive the same credit as do civilian candidates.

RECORDS OF SURGICAL CASES AND INSPECTIONS

1. Records of a specified number of consecutive surgical cases may be requested by the Board in order to evaluate properly the work of an applicant.
2. A representative of the Board may visit a community in order to evaluate properly the work of an applicant.

APPROVED RESIDENCIES

1. Training in the United States must be taken in institutions approved for resident training in orthopaedic surgery by the Residency Review Committee. The latter is made up of representatives of the Council on Medical Education and Hospitals of the American Medical Association and the American Board of Orthopaedic Surgery.

A complete list of approved institutions is published annually in the Internship and Residency Number of THE JOURNAL of the American Medical Association. The list is not obtainable from the office of the Board.

2. The integral parts of approved residencies are designated in the list by the following symbols: A—Adult Orthopaedic Surgery; C—Children's Orthopaedic Surgery; F—Fracture Surgery and related Trauma. Training in the basic sciences is given either as an integral part of these services or as a separate course. The length of training in various approved institutions is also indicated.

3. Candidates electing an additional year of training in adult orthopaedic surgery and surgery of fractures and related trauma in lieu of a year of children's orthopaedic surgery for the "limited certificate" may satisfy requirements by continuing their training in institutions approved for adult orthopaedic surgery, or adult orthopaedic surgery and fractures and related trauma.

4. Credit for time spent in institutional resident training will be granted only for the period the institutions are on the approved list. Credit may be given from the start of the resident training period if the institution becomes approved during the time the candidate is in training and the program is found to be satisfactory.

5. Candidates engaged in resident training in institutions which become disapproved in whole or in part receive resident training credit for the entire period during which their contracts are in force.

6. The term "fellow" is considered synonymous with "resident" only if the position occupied and the work performed by the former are in all respects equal to those of the latter. The total number of residents and fellows performing resident training for credit must not exceed the number approved by the Residency Review Committee for a given program.

7. Institutions approved for resident training in orthopaedic surgery by the Residency Review Committee may utilize the training facilities of institutions not individually approved for resident training by the aforementioned Committee, provided that:

(*a*) The resident spends at least half of the minimum time required in each category of training in institutions approved for that type of training by the Council.

(*b*) The training supplements services in the same categories in which the institutions responsible for the training are approved.

(*c*) Whenever the supplemental service is used for six months of training, the program is inspected and is subject to approval by the Residency Review Committee.

NOTE: Services thus approved may request that they be included under the appropriate training program in the official list of residencies of the Council on Medical Education and Hospitals of the American Medical Association. Services giving five months or less of training are subject to approval but not necessarily inspection by the Residency Review Committee; they are not included in the official list of residencies of the Council.

(*d*) A maximum of three months is spent on services devoted to rehabilitation.

REQUIREMENTS OF INSTITUTIONS OFFERING ORTHOPAEDIC TRAINING

1. Institutions approved for full three-year programs and including all parts of the training requirements may integrate all parts so that they may be given concurrently.

2. Institutions now approved for less than three years of resident orthopaedic training must make cooperative arrangements with other approved institutions so as to provide complete three-year programs for all of the residents by January, 1962.

3. The minimum requirements of resident orthopaedic training programs are as follows:

(*a*) One year of training in adult orthopaedic surgery.

(*b*) Six months of training in the basic sciences.

(*c*) Six months of training in fractures and related trauma.

(*d*) One year of training in children's orthopaedic surgery if "Full Certification" is the aim, or else a second year of adult orthopaedic training in surgery, fractures, and related trauma if "limited certification" is elected.

(To be discontinued after January 1, 1962.)

4. Candidates who take an additional year of training in adult orthopaedic surgery and fracture surgery in place of a year of children's orthopaedic surgery may satisfy the requirements by devoting the additional year either solely to training in adult orthopaedic surgery or by taking six months of adult orthopaedic surgery and six months of fractures and related trauma. But the entire year must not be devoted solely to training in fractures and related trauma.

5. Training in adult and children's orthopaedic surgery must include observation and first-hand experience in diagnosis, treatment, and operative and postoperative care of orthopaedic problems.

6. Training in fracture surgery and related trauma must similarly include observation and first-hand experience in diagnosis, conservative and operative treatment, and postoperative care of recent and old fractures as well as other forms of related trauma.

7. Training in the basic sciences must instill a sound knowledge of anatomy, pathology, physiology, bacteriology and biochemistry, insofar as these relate to orthopaedic surgery.

8. Candidates may complete the residency requirements by training in several approved institutions, provided that all of the aforementioned requirements are satisfied.

9. No training period of less than six consecutive months in one institution may be credited toward resident training requirements, except as noted in Section XIV-7c.

10. Candidates in resident training may not engage in private practice of their own or receive credit for time spent in private office practice of others.

ADDENDUM TO THE RULES OF THE AMERICAN BOARD OF ORTHOPAEDIC SURGERY

Training on Hand Services:

Six months of credit may be granted toward adult orthopaedic surgery for time spent on full time Hand Services as they pertain to orthopaedic surgery in approved hospitals. The Residency Review Committee is also empowered to approve for training certain hand services on which residents are not necessarily full time in an approved hospital.

Canadian Applicants:

Candidates trained in Canada or elsewhere except in the United States and practicing in Canada are required to pass the qualifying examination in Canada before they can apply for the examination of the American Board of Orthopaedic Surgery.

Eligibility for Examinations of Foreign Graduates with Approved Residency Training in Orthopaedic Surgery Who Do Not Hold Citizenship in the United States or Canada:

Foreign doctors who complete approved training in Orthopaedic Surgery in the United States and who return to their own countries to practice, may take the examinations of the American Board of Orthopaedic Surgery under specific rules and regulations. For further information, write to the Secretary of the Board.

Candidates for Part II Examinations:

Each application must be accompanied by an unbound list of all of his patients admitted to the hospitals in which he has practiced for the year immediately preceding the execution of his application form, or the year just prior to the reopening of his application. Rules Pertaining to the Sequence of Examinations (To Become Effective as of 1962):

Part I examination must be taken within three years after the completion of training unless there is a reason acceptable to the Committee on Eligibility, or candidate will be required to take an additional year of training on an approved residency program to qualify.

Candidates must repeat Part I examination after failure within a three year period unless there is a reason acceptable by the Committee on Eligibility, or they will be required to take an additional year of training on an approved residency program to qualify.

Candidates must repeat Part II after failure within a three year period unless there is a reason acceptable by the Committee on Eligibility, or they will have to repeat Part I examinations.

AMERICAN BOARD OF OTOLARYNGOLOGY

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GENERAL REQUIREMENTS

The following general qualifications of candidates for examination are required by the Board:

1. A candidate shall possess moral, ethical and professional qualifications acceptable to the Board.

2. A candidate shall have been graduated five years or more from a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association or the Canadian Medical Association.

3. A candidate must have had an internship of at least one year approved by the Council on Medical Education and Hospitals of the American Medical Association or the Canadian Medical Association.

4. A candidate from the United States or Canada must be a member of the American Medical Association or the Canadian Medical Association and their constituent local medical societies.

5. A candidate who has received his pre-medical or medical instruction outside of the United States or Canada shall present documented evidence of this instruction.

6. A candidate from a country outside the United States or Canada who has received acceptable foreign pre-medical and medical training and who has served an approved residency in Otolaryngology in the United States or Canada is eligible for examination provided he meets all other requirements of the Board.

7. A candidate who has received his pre-medical, medical and residency training outside the United States or Canada will be considered on an individual basis by the Board.

SPECIAL MINIMAL REQUIREMENTS

Four years of post graduate training in addition to the internship. This period must include:

1. One year in an approved residency in general surgery.
2. Three years in an approved residency in Otolaryngology.

It is understood that the candidate must have preparation in the fundamentals of the basic sciences—anatomy, biochemistry, embryology, microbiology, pathology and physiology—especially as they relate to Otolaryngology.

The Board would emphasize the fact that the above are minimal requirements for certification and as a foundation for further development in the broad field of Otolaryngology.

A candidate may be examined at the conclusion of his training without time spent in practice.

In exceptional circumstances certain candidates who do not meet all the prescribed general or special requirements may be accepted for examination but only by special action of the Board.

At the discretion of the Board, a limited certificate may be issued to one who practices one branch of the specialty exclusively.

APPLICATION AND FEES

1. A candidate for examination shall complete and submit the application forms supplied by the Secretary of the Board. It shall contain a record of the following: pre-medical and medical training, internships, residencies, and other postgraduate study, hospital and dispensary appointments, teaching positions, service in the armed forces, membership in medical societies, list of personal publications, if any, and any additional information considered of value to the Board's consideration of his qualifications.

The application shall be signed by two Diplomates of the American Board of Otolaryngology. It shall be accompanied by (a) two unmounted, autographed and recent, dated, 4" x 3½" photographs, (b) three letters of endorsement from responsible citizens, (c) a list of operations and assists performed by the candidate during his residency training (d) verification of training and (e) the application fee.

The application shall be filed with the Secretary not less than nine months prior to the probable date of the examination with the exception of the list of operations which must be submitted three months prior to the termination of the residency.

2. An accepted application remains active for three years. If a candidate fails to appear for examination within three years, the application fee is forfeited and re-application will be necessary.

3. The Board reserves the right to reject any application and such action shall not require explanation by the Board.

4. No statement indicating a prospective candidate's eligibility for examination by the Board can be given until after formal application is made.

5. The fee for the examination is $150. Of this sum $75 must accompany the application. No part of this $75 is returnable. No application will be acted upon until the $75 application fee is received. The remaining $75 of the fee of $150 must be paid to the Secretary immediately upon notification of acceptance for examination. No part of this second $75 is returnable once the candidate has been accepted for examination. A re-examination fee of $150 is required of candidates who request re-examination.

EXAMINATION

The time and place of the examination will be determined by the Board. Advance notices of examinations are published in the Journal of the American Medical Association and certain journals devoted to the specialty of Otolaryngology. Insofar as is possible examinations will be held at or near the time and place of the annual meetings of the American Academy of Ophthalmology and Otolaryngology and/or of the senior Ear, Nose and Throat Societies. Time allotted for these examinations is from three to five days.

The examination encompasses all phases of Otolaryngology including peroral endoscopy, maxillofacial surgery, and surgery of the neck (excluding the thyroid gland), and includes the following sections:

1. Oral examinations covering all phases of Otolaryngology.
2. Basic sciences as applied to Otolaryngology.
3. Gross pathology and histopathology.
4. Clinical examinations of patients (history taking, physical examination, observation, functional tests, laboratory and x-ray data, a discussion of differential diagnosis, etc.).

Unless otherwise specified all examinations will be conducted orally.

AMERICAN BOARD OF PATHOLOGY

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GENERAL REQUIREMENTS

1. Satisfactory moral and ethical standing in the profession.
2. License to practice medicine or a certificate of the National Board of Medical Examiners.
3. The applicant must devote his time primarily and principally to the practice of pathology.

PROFESSIONAL EDUCATION

1. Graduation from a medical school in the United States approved by the Council on Medical Education and Hospitals of the American Medical Association, or graduation from medical schools in other countries acceptable to the board.

SPECIAL TRAINING AND EXPERIENCE

1. The board admits candidates to examinations who are otherwise eligible and who have had either of two following types of training and experience.

(*a*) After five years, if four of the five years have been in institutions approved by the Council on Medical Education and Hospitals of the American Medical Association or by the board; or

(*b*) After 11 years if none of the training and experience has been in institutions so approved.

2. The specific requirements for those acceptable after five years are as follows:

(*a*) Pathology anatomy only.

(1) Four years of supervised study and training in an institution approved for residency training in pathological anatomy by the Council on Medical Education and Hospitals of the American Medical Association or by the board. It is immaterial whether the candidate holds the title of resident or fellow or assistant. Candidates may, at their own election, substitute not to exceed 12 months of a straight or rotating clinical internship or a fellowship or instructorship in any of the preclinical departments of a university for one of the four years. In addition, time, not to exceed 12 months, spent in a department of pathology of an approved school of medicine after the completion of the second year of undergraduate study may be counted for full credit toward the four years.

(2) One additional year, which may be a continuation of the preceding or may be independent practice of pathological anatomy in a hospital approved by the American Medical Association or other institutions acceptable to the board.

(*b*) Clinical pathology only.

(1) Four years of supervised study and training in an institution approved for residency training in clinical pathology by the Council on Medical Education and Hospitals of the American Medical Association or by the board. It is immaterial whether the candidate holds the title of resident or of fellow or assistant. Candidates may, at their own election, substitute not to exceed 12 months of a straight or rotating clinical internship or a fellowship or instructorship, in any of the preclinical departments of a university, for one of the four years. Candidates holding also a master's or doctor's degree in a special field of clinical pathology (bacteriology, immunology, chemistry, parasitology, or hematology) may obtain time credit for not more than 12 to 24 months toward the four years for this work, regardless of whether it was taken before or after the medical degree. The evaluation of time credit will depend on how much of the broad field of clinical pathology was covered in the graduate work.

(2) One additional year, which may be a continuation of the preceding or may be independent practice of clinical pathology in a hospital approved by the American Medical Association or other institutions acceptable to the board.

(*c*) Pathological anatomy and clinical pathology.

(1) Four years of supervised study and training divided as follows: (*a*) two years of supervised study and training in pathological anatomy as outlined in the preceding paragraph 2-(*a*)-(1), (*b*) Two years of supervised study and training in clinical pathology as outlined in the preceding paragraph 2-(*b*)-(1). Candidates declared eligible before July 1, 1953, may, at their own election, substitute one year (twelve months) of a straight or rotating clinical internship for one year of this special training in clinical pathology. After July 1, 1953, all candidates applying for both pathological anatomy and clinical pathology will be required to have two years of supervised training in clinical pathology.

(2) One additional year, which may be a continuation of the preceding or may be independent practice of both pathological anatomy and clinical pathology in a hospital approved by the American Medical Association or other institutions acceptable to the board. After July 1, 1953, candidates who elect to claim credit for one year for a clinical internship must take this fifth year as supervised study and training in clinical pathology in institutions approved for residency training in clinical pathology by the Council on Medical Education and Hospitals of the American Medical Association or by the board. Candidates declared eligible after July 1, 1953, who do not take a clinical internship, may after four years of training as outlined in 2-(1)-(*a*) and (*b*), spend the fifth year in independent practice in an institution or laboratory acceptable to the board.

Note: As outlined in the preceding paragraphs, the total time requirements of the board are unchanged after July 1, 1953, namely, five years of study or practice after graduation from medical school, with exceptions noted in sections 2-(*a*)-(1) and 2-(*b*)-(1).

3. The specific requirements for those acceptable after 11 years are as follows: (*a*) The practice of pathology under circumstances acceptable to the board for a period of not less than 11 years. At the election of the candidates, a period

not to exceed one year of straight or rotating clinical internship may be substituted for one of the 11 years. For those candidates in this category who have had some special study and training in pathologic anatomy or clinical pathology acceptable supervised study and training, only seven years of practice are required.

CREDIT FOR MILITARY SERVICES

Credit may be allowed for training and experience in pathology in the federal services during the period July 1, 1940, to June 30, 1947. This credit for training or experience or both is given on an individual basis and will depend on the opportunity the applicant has had, as indicated by his or her medical service record in the specialty of pathology.

After July 1, 1947, credit for those military services will be given on the same basis as it is in civilian institutions, except that the rule in the preceding paragraph will not apply to reserve officers who continue on active duty or are called to active duty after that date.

SPECIAL FIELDS OF PATHOLOGY, CLINICAL CHEMISTRY, CLINICAL MICROBIOLOGY, HEMATOLOGY, NEUROPATHOLOGY (IN FORCE AFTER JULY 1, 1954) AND FORENSIC PATHOLOGY (IN FORCE AFTER JULY 1, 1964)

The trustees of the American Board of Pathology have adopted the following requirements for certification in special fields of pathology, effective July 1, 1954.

Candidates who have met all general requirements and have had special training and experience that is acceptable to the board in a special field of pathological anatomy or clinical pathology may apply to the board for certification in that special field. The board, at its discretion, may approve this application, and, after the candidate has successfully passed a prescribed examination or has fulfilled certain special qualifications (see below, section D), will issue a certificate designating the special field.

A. General Qualifications:

1. Satisfactory moral and ethical standing in the profession.

2. License to practice medicine or a certificate of the National Board of Medical Examiners.

3. The applicant must devote his time primarily and principally to the practice of pathology or the special field of pathology in which he is requesting certification.

B. Professional Education:

1. Graduation from a medical school in the United States approved by the Council on Medical Education and Hospitals of the American Medical Association or graduation from a medical school in other countries acceptable to the board.

C. Special Training and Experience:

The board admits candidates to examination in special fields of pathology who are otherwise eligible and who have had either of the following types of training.

1. Applicants already holding a certificate of the board in clinical pathology or the combined certificate in pathological anatomy and clinical pathology (for qualification in clinical chemistry, clinical microbiology, and hematology), or in pathological anatomy (for qualification in neuropathology)—two additional years of supervised training in the special field of their choice in institutions approved by the Council on Medical Education and Hospitals of the American Medical Association or by the board.

Certification in pathologic anatomy (either pathologic anatomy only, or pathologic anatomy and clinical pathology) is a prerequisite for admission to the examination for certification in the special field of forensic pathology. A candidate who is certified in pathologic anatomy may be eligible to apply for examination in forensic pathology if he presents evidence of an additional 12 months of approved full-time training in forensic pathology.

2. Applicants not holding a certificate in pathological anatomy or clinical pathology—five years of training in the special field of their choice, provided four of the five years Education and Hospitals of the American Medical Association or by the board. Candidates may, at their own election, substitute not to exceed 12 months of a straight or rotating clinical internship or a fellowship or instructorship in any of the preclinical departments of a university for one of the four years. The fifth year may be a continuation of supervised training or may be independent practice of the particular specialty in a hospital approved by the American Medical Association or in other institutions acceptable to the board.

The above paragraph does not apply to forensic pathology. For further details, write to the Secretary of the Board.

D. Special Qualifications-Certification Without Examination:

Prior to Jan. 1, 1960, (July 1, 1964, for forensic pathology) the Board at its discretion may certify candidates without examination if the following conditions have been met as of January 1, 1955 (July 1, 1959, for forensic pathology):

1. That the candidate has been for a period of five years of professorial rank in the special field of his choice and in an approved medical school, or

2. For forensic pathology—that the candidate has been practicing forensic pathology as a recognized expert in the field for a period of ten years, and holds a certificate from the American Board of Pathology in pathologic anatomy, or in pathologic anatomy and clinical pathology, or, under special circumstances, in clinical pathology.

APPLICATION BLANK AND FEE

Application must be made on the special form that may be procured from the secretary and forwarded with other required credentials and the application fee. An application cannot be given consideration by the board unless it is accompanied by the application fee.

The application or examination fee for candidates is $100. If the candidate fails in his examination he will be admitted to a second examination after one year. The applicant must pay an additional fee of $50 before a second examination will be given.

The application fee of $100 has been determined after careful consideration and is based on actual estimates of the expense of examination and administration. None of the board members receives any compensation for his services except actual expenses incurred.

If the applicant, for any reason, is deemed ineligible for examination by the board, his fee will be returned; however, the application fee is not returnable after the candidate has officially been accepted for examination and notified to report for the examination.

EXAMINATIONS

Examinations will be held at the discretion of the Board.

The examinations are to be based on the broad principles of pathology with emphasis on diagnosis, interpretation, and technique. The applicant may apply for certification in pathologic anatomy only, clinical pathology only, pathologic anatomy and clinical pathology, or a special field.

The examinations in pathological anatomy consist of a written test, an oral examination on gross pathology, and a practical examination in microscopic pathology. The examination in clinical pathology consists of a written test and an oral and practical examination in the six phases of clinical pathology: bacteriology, hematology, clinical chemistry, parasitology, immunology, and clinical microscopy.

DEFINITIONS

1. Pathological anatomy is that branch of pathology that deals with the morphological aspects of disease, recognition being given that that definition covers two phases of pathology: (*a*) the applied phase with special attention to the description and diagnosis of gross and microscopic specimens, (*b*) the academic phases of teaching and general morphological diagnosis.

2. Clinical pathology is that branch of pathology that deals with bacteriology, immunology, clinical chemistry, parasitology, hematology, endocrinology, clinical microscopy, and the application of the physical and biological sciences to the diagnosis, prognosis, and treatment of disease.

CRITERIA FOR APPROVAL OF INSTITUTIONS FOR TRAINING IN PATHOLOGY

In Sections C-2-a, C-2-b, and C-2-c of the General Requirements, it is stated that candidates must have certain periods of supervised study and training. The American Board of Pathology, in cooperation with the Council on Medical Education and Hospitals of the American Medical Association, certifies hospitals in the United States as satisfactory for this supervised study and training. Lists of these hospitals are published in the Internship and Residency Number of THE JOURNAL of the American Medical Association each year. In addition, the American Board of Pathology recognizes certain hospitals outside the United States and certain laboratories not connected with hospitals in the United States. Inquiries concerning these should be directed to the secretary of the board.

The general criteria for approval of hospitals and laboratories are both qualitative and quantitative. On the score of quality, consideration is given to the qualifications of the director of laboratories and in the associates and assistants, the supervision of work of the person in training, the excellence of the educational program, and the exactness and completeness of the laboratory work performed. On the score of quantity, consideration is given to the volume and distribution of laboratory work, both in absolute numbers and in relation to the size of the hospital, to the diversity and completeness of test performed, to the size and equipment of the laboratory, and to the number of professional and nonprofessional personnel in relation to the volume of work.

In general, the qualitative standards will determine whether or not a hospital or laboratory is approved and the quantitative standards will determine whether the approval is for one, two, three, or four years of credit toward the requirements of the board.

In evaluation of applications the board takes into consideration the following criteria:

1. Director of laboratories or pathologist:

(*a*) It is required that the responsible head of the laboratory hold the certificate of the American Board of Pathology in the subject for which the hospital is approved, or be eligible for certification, and that he or she spend full time in the hospital. Full time is not interpreted in terms of hours, but rather that the director have no obligation outside the one approved hospital except in a university department of pathology in which he and the residents have an opportunity to participate in the educational program;

(*b*) In special instances, the equivalent of full time by two or more qualified persons will be accepted, and one person need not spend the entire working day in the laboratory;

(*c*) In special instances, two or more hospitals will be approved as a unit with a single full-time director of laboratories, if it is apparent that a satisfactory training program can be conducted;

(*d*) *In hospitals with over 350 beds, it is expected that* the professional staff, in addition to the pathologist, will include one or more persons with special training and qualifications in the subspecialities of clinical pathology.

2. Technicians:

There are no absolute criteria, but it is expected that the number of technicians will be proportional to the volume of laboratory work and that, insofar as possible, the technicians will hold the certificate of the Registry of Medical Technologists of the American Society of Clinical Pathologists.

3. Floor space of laboratory:

In general, it is believed that the size of the laboratory should be related to the size of the hospital and the volume of laboratory work. A minimal ratio is 4 sq. ft. of space in the laboratory, including morgue and autopsy room, for each bed in the hospital.

4. Equipment for the laboratory:

The variety and completeness of laboratory tests performed depend on the size of the hospital. In all hospitals there should be facilities for the more common tests in clinical pathology, for study of surgical specimens, and for performance of autopsies. In larger hospitals, the variety of tests performed should be larger, and in hospitals with over 500 beds all recognized laboratory procedures should be available for study and treatment of the patient.

5. Autopsy percentage:

No institution with a percentage of less than 15 will be approved, and those institutions with percentages between 15 and 40 will be given special scrutiny.

6. Examination of surgical specimens:

All surgical specimens should be sent to the laboratory for gross examination, and microscopic examinations should be made unless there are general or special reasons not to do so.

7. Indices:

There should be indices according to the names of the patients and the diagnoses of all surgical and autopsy material. Indices of clinical pathology are left to the discretion of the hospital.

8. Museum:

There should be available fixed anatomic and pathological specimens for study by the staff in proportion to the size of the hospital. Properly filed and indexed color photographs may in part be substituted for museum specimens.

9. Library:

A reasonably complete library of modern books and recent unbound and bound journals should be available to the hospital, and the more commonly used books and journals should be on hand in the laboratory.

10. Education program:

The work of the person in training should be supervised. Conferences, seminars, journal clubs, and demonstrations should be conducted as frequently as the volume of material and the size of the staff justifies. A clinicopathological conference must be held at least every two weeks.

11. Volume of laboratory work:

(*a*) As indicated in the following categories, no hospitals with less than 75 autopsies, 1,000 surgical specimens, and 25,000 tests in clinical pathology annually will be approved (Category D), except as outlined in the following paragraphs. It is the belief of the board that less material than this is inadequate for the training of a pathologist.

(*b*) In the field of clinical pathology, there should be a reasonable diversification of tests, and in each category there should be sufficient absolute volume to provide training and experience. There are no absolute criteria, but special scrutiny will be given to a hospital in which there is not a reasonable diversification and variety.

(*c*) In the field of pathological anatomy, a deficiency in either autopsies or surgical specimens may be made up by an excess of the other, if the deficiency does not exceed 20% of the minimum required in the ratio of one autopsy to 75 surgical specimens. Thus, in a hospital approved for one year in pathological anatomy and clinical pathology, the minimums are 75 autopsies and 1,000 surgical specimens. If a hospital has 2,500 surgical specimens, it is acceptable if there are only 60 autopsies.

If a hospital has met these minimal qualitative and quantitative standards, it will then, on the basis of the following quantitative standards, be approved for one, two, three, or four years of training in pathological anatomy, or clinical pathology, or both, or some special field as shown for the number of residents indicated.

CATEGORY A. In both pathological anatomy and clinical pathology for four years (as required of all candidates seeking certification in both fields who are examined after July 1, 1952).

Minimum: 150 autopsies, 1,750 surgical specimens, and 65,000 tests in clinical pathology for four residents. Additional resident for each 50 autopsies or 500 surgical specimens or 20,000 tests in clinical pathology.

CATEGORY B. In both pathological anatomy and clinical pathology for three years. This meets all requirements of the board for supervised training until July 1, 1952. Candidates examined after that date who seek certification in both subjects must take an additional year of supervised training in clinical pathology or pathological anatomy in another hospital that is approved for the deficiency of training required.

Minimum: 125 autopsies, 1,500 surgical specimens, and 50,000 tests in clinical pathology for three residents. Additional resident for each: 50 autopsies, 500 surgical specimens, or 20,000 tests in clinical pathology.

CATEGORY C. In both pathological anatomy and clinical pathology for two years. Candidates taking two years in these institutions must have an additional year (two years after July 1, 1952) in an institution in category A, B, or D.

Minimum: 100 autopsies, 1,250 surgical specimens, and 40,000 tests in clinical pathology for two residents. Additional resident for each 50 autopsies, or 500 surgical specimens or 20,000 tests in clinical pathology.

CATEGORY D. In both pathological anatomy and clinical pathology for one year. Candidates taking training in these institutions must have an additional two years (three years after July 1, 1952) in institutions that are approved for the deficiency of training required.

Minimum: 75 autopsies, 1,000 surgical specimens, and 25,000 tests in clinical pathology for one resident. Additional resident for each 50 autopsies, or 500 surgical specimens, or 20,000 tests in clinical pathology.

CATEGORY E. In pathological anatomy only, for three or more years. Candidates taking all training in these institutions will not be eligible for certification in clinical pathology unless an additional year (two years after July 1, 1952) is taken in clinical pathology in institutions that are approved for the deficiency of training required.

Minimum: 175 autopsies and 1,500 surgical specimens for three residents. Additional resident for each 50 autopsies or 500 surgical specimens.

CATEGORY F. In pathological anatomy only, for two years. Candidates taking training in these institutions will not be eligible for certification in clinical pathology unless they take one additional year full time in clinical pathology (two years after July 1, 1952) in institutions that are approved for the deficiency of training required, and will be eligible in pathological anatomy only if another year is taken in another institution that is approved for one or more years in pathological anatomy.

Minimum: 125 autopsies and 1,250 surgical specimens for two residents. Additional resident for each 50 autopsies or 500 surgical specimens.

CATEGORY G. In pathological anatomy only, for one year. Candidates training in these institutions will not be eligible in both pathological anatomy and clinical pathology unless they take an additional year in pathological anatomy and an additional year (two years after July 1, 1952) in institutions that are approved for these periods of training. Candidates seeking certification in pathological anatomy only must study an additional two years in institutions that are approved for that period of training.

Minimum: 75 autopsies and 1,000 surgical specimens for one resident. Additional resident for each 50 autopsies or 500 surgical specimens.

CATEGORY H. For postmortem part of pathological anatomy for two years. Credit is never allowed for more than two years. Candidates taking training in these institutions may pursue further training as follows: 1. For pathological anatomy only. An additional year in an institution in Category A, B, C, E, F, or G with assignment to surgical pathology principally. 2. For pathological anatomy and clinical pathology. An additional year (two years after July 1, 1952) in an institution in Category A, B, C, L, M, or N with assignment to clinical pathology and one-half year assigned to surgical pathology principally, in an institution in Category A, B, C, or J.

Minimum: 125 autopsies for two residents. An additional resident for each 60 autopsies.

CATEGORY I. For postmortem part of pathological anatomy for one year. Candidates taking training in these institutions may pursue further training as follows: 1. For pathological anatomy only. An additional two years in an institution in Category A, B, C, E, F, or G with general assignments. 2. For pathological anatomy and clinical pathology. An additional year (two years after July 1, 1952) in an institution in Category A, B, C, L, M, or N with assignment to clinical pathology; and one year to an institution in Category A, B, C, E, F, or G.

Minimum: 75 autopsies for one resident.

CATEGORY J. Surgical pathology part of pathological anatomy for one year. Credit is never allowed for more than one year, and the director of the laboratory must hold the certificate of the American Board of Pathology in pathological anatomy or be eligible for certification. Candidates training in these institutions may pursue further training as follows: (1) For Pathological Anatomy only. An additional two years in an institution in Category H or in an institution in Category A, B, or C with assignment to postmortem pathology only. (2) For Pathological Anatomy and Clinical Pathology an additional year (two years after July 1, 1952) in an institution in Category A, B, C, L, M, or N with assignment to clinical pathology full time, and an additional year to an institution in Category A, B, D, E, F, G, or H with assignment to postmortem pathology full time.

Minimum: 2,000 surgical specimens for one resident. An additional resident for each 1,000 surgical specimens.

CATEGORY K. Special pathology as part of pathological anatomy. Credit for not to exceed one-fourth the time credit (one year if seeking certification in pathological anatomy only, six months if seeking both pathological anatomy and clinical pathology) of candidates applying in pathological anatomy may be taken in special laboratories with limited activities such as neuropathology, orthopedic pathology, ophthalmic pathology, etc. The candidate who receives credit in this category may, on request, have the field of special pathology designated on the certificate of the board.

CATEGORY L. Clinical pathology for three or more years. Candidates taking three years of training in these institutions will not be eligible for pathological anatomy unless they take an additional two years in institutions approved for pathological anatomy.

Minimum: 100,000 tests in clinical pathology for three residents. Additional resident for each 50,000 tests.

CATEGORY M. Clinical pathology for two years. Candidates taking two years training in these institutions must take the same additional training as in Category L to be eligible for pathological anatomy also. To be eligible for clinical pathology only, an additional year of clinical pathology must be taken in an approved institution.

Minimum: 75,000 tests in clinical pathology for two residents. An additional resident for each 50,000 tests.

CATEGORY N. Clinical pathology for one year. Candidates taking training in those institutions must take an additional two years in an institution in Category A, B, C, L, or M assigned to clinical pathology for eligibility in clinical pathology only. To be eligible in pathological anatomy and clinical pathology, an additional two years in approved institutions is required.

Minimum: 50,000 tests in clinical pathology for one resident.

CATEGORY O. Special clinical pathology as part of clinical pathology. Candidates applying for clinical pathology only may receive credit for not in excess of one-quarter of the training period (one year if seeking certification in clinical pathology only, six months if seeking both pathological anatomy and clinical pathology) for work in a special field of clinical pathology, such as bacteriology, immunology, etc. Under these circumstances, one request, the special field will be designated on the certificate of the board.

CATEGORY P. Research: Residence in certain institutions in which full time is devoted to research with a direct application to the practice of pathological anatomy or clinical pathology may be accepted for credit not to exceed one-third the time requirement (20 months if no clinical internship, 16 months if a clinical internship was taken). The board encourages research and believes that all candidates should carry on investigation during their training in all institutions. Therefore, this category is only for those wishing to do full time research.

AMERICAN BOARD OF PEDIATRICS

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John A. Bigler, Chicago
Crawford Bost, San Francisco
Arild E. Hansen, Oakland, Calif.
J. A. Johnston, Detroit
Ralph V. Platou, New Orleans
A. Ashley Weech, Cincinnati
John McK. Mitchell, Executive Secretary, 6 Cushman Rd., Rosemont, Pa.

REQUIREMENTS FOR CERTIFICATION*

All candidates for examination for certification must meet the following requirements:

1. Graduation from an approved medical school.
2. Licensure to practice in the United States prior to issuance of a certificate except in those situations in which a license to practice is not required.
3. One year of rotating, pediatric, or other internship in an approved hospital.
4. Two years of specialized residency-type training in an approved pediatric center.

At least one year of the two years of required residency training must be a full-time medical pediatric inpatient residency or internship in an approved institution. The second year of required residency training may be met in the ways listed below, although the board recommends that whenever possible candidates complete the two years as regular residents.

(*a*) Graduate School courses will be accepted only in exceptional cases by prior arrangement, up to a maximum of nine months.

(*b*) A maximum of three months' credit each is allowed for full-time residency type training in allied pediatric subjects such as pediatric allergy, pediatric psychiatry, pediatric pathology, pediatric radiology, newborn service, etc.

5. A subsequent term of two years of specialized study or practice or a combination of the two.

Credit for one year toward this requirement is allowed for medical military service regardless of the assignment. The maximum credit that any candidate may receive toward the practice requirement for work done prior to the completion of residency training is one year.

Research residencies which involve little or no clinical training are creditable for only three months. Research residencies which include significant clinical training may be prorated to a total of six months for a year of service. Teaching fellowships may not be offered in lieu of residency appointments.

Both research residencies and teaching fellowships are, of course, entirely acceptable in satisfaction of the practice or further study requirements. Portions of a research residency not applicable for residency training credit may be carried over for practice credit.

Preceptorships are not accepted for credit toward the residency requirement, but are accepted toward the practice requirement.

GRADUATES OF MEDICAL SCHOOLS IN CANADA

Graduates of approved medical schools in Canada and those who have received their internship and residency training in pediatrics in hospitals approved by the Royal College of Physicians and Surgeons of Canada will be eligible for examination for certification under the same regulations as those trained in the United States.

GRADUATES OF FOREIGN MEDICAL SCHOOLS

Citizens of the United States.—Citizens of the United States of America who are graduates of medical schools other than those in the United States and Canada will be processed for eligibility for examinations for certification if they can meet all the following requirements:

1. They are graduates of medical schools recommended by the Council on Medical Education and Hospitals of the American Medical Association.
2. They hold a license to practice in the United States.
3. They can meet the internship and residency training requirements of the board as detailed above with the following provisions:

(*a*) Internship and residency training must be served in hospitals approved by the board in the United States.

(*b*) A maximum of the internship and one year of residency training may be allowed for such experience obtained in a small list of foreign hospitals recognized by the board. The other year of residency training must be served in a straight inpatient medical pediatric residency appointment in an approved hospital in the United States.

Citizens of the United States of America who are graduates of medical schools other than those in the United States or Canada, and which are not recommended by the Council on Medical Education and Hospitals of the American Medical Association may be accepted for examination for certification after they have passed successfully part 2 of the examinations of the National Board of Medical Examiners, or the Qualification Examination of the Educational Council for Foreign Medical Graduates, provided they meet all other requirements of the Board as provided in regulations governing such candidates.

Citizens of Other Countries.—Properly qualified candidates who are permanent residents in and citizens of other countries and are licensed to practice there and who have fulfilled the residency training requirements listed above in the United States or Canada may apply for examination for certification by the American Board of Pediatrics.

Such foreign candidates who are returning to their own country at the end of their training period may be examined without completion of two full years in the practice of pediatrics. The residency training requirements must be completed in full in advance of admission to any part of the examinations.

A special certificate, appropriately identified to distinguish it from the regular certificate of this board, may be issued to such candidates who have passed successfully the examinations of this board after they have completed such a period of practice or further study in their own country which when added to similar experience in the United States or Canada, make a total of two years of the practice of pediatrics.

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*A booklet of information, presenting in more detail the data published here, may be obtained from the Executive Secretary of the Board. To avoid misunderstanding, the board urges any candidate whose training is not clearly covered in these regulations to communicate with that office. Whenever possible, this should be done before entering upon the appointment in question.

INFORMATION CONCERNING EXAMINATIONS

The examinations for certification are given in two sections: part 1 is written, part 2 is an oral examination.

PART 1—*Written*

Written examinations are objective in type and are given once each year, usually in January, simultaneously at a number of places scattered throughout the country, and at a few locations abroad. Candidates must pass the written examination before admission to the oral examination will be authorized.

PART 2—*Oral*

Oral examinations are held four to six times each year at centers offering suitable facilities, in locations determined by proximity to the largest number of eligible candidates. One examination session each year is scheduled at a location closer to candidates from some less populous area. As far as possible, candidates are given a choice of locations, taking into account date application is filed, date of eligibility and proximity to the examination site.

Candidates who are admitted to the oral examination (part 2) will not be informed of their grade on the written portion. Their relative standing in part I will, however, be utilized in final decision with regard to passing.

Candidates who fail after taking part 2 will not be required to retake part 1 but may be advised to do so in order that they may have an opportunity to improve a low score.

APPLICATION

Application must be made on special blanks, which will be furnished by the executive secretary after a preliminary survey of the applicant's training. Applications may be submitted one year in advance of eligibility date; they will not be accepted earlier. The number of candidates admitted to a given written examination will be determined by the number who can be examined orally during that year, plus a reasonable number of alternates.

LETTERS OF RECOMMENDATION

Letters from two competent pediatricians recommending each applicant must be sent to the executive secretary of the board. These letters should not accompany the application but should be sent directly to the executive secretary.

FEES

The application fee is $75.

The full fee must be remitted with the application. No additional fee is required for second and third written examination. The fee for second and third oral examinations is $50 each.

All fees are subject to change effective January 1st of any year.

CERTIFICATION IN SUBSPECIALTY OF ALLERGY

William C. Deamer, Chairman, San Francisco
Susan Dees, Durham, N. C.
Jerome Glaser, Rochester, N. Y.
George B. Logan, Rochester, Minn.
Harry L. Mueller, Boston
Richard H. Todd, Washington, D. C.

The American Board of Pediatrics has established certification in allergy as a subspecialty of pediatrics.

All candidates must hold a certificate in Pediatrics before submitting an application for examination in Allergy.

Each allergy application is individually considered and must be accepted by the subspecialty board.

INFORMATION CONCERNING EXAMINATION

Allergy examinations consist of written and oral portions. The written examination will be given once a year under a local monitor and must be passed before the candidate is admitted to oral examination. Oral examinations will be held at times and places designated by the subspecialty board. Ample notice will be sent to candidates.

FEES

The application fee for certification in allergy is $100.

The full fee must be remitted with the application.

No additional fee is required for second and third written examinations. The fee for second and third oral examinations is $50 each.

All fees are subject to change effective January 1st. of any year.

Application forms will be forwarded on request to the office of the Executive Secretary of the American Board of Pediatrics and should be returned to that office when completed. All correspondence should be addressed to him.

REQUIREMENTS

(1) Certification in Pediatrics.

(2) Two years of full-time training in an approved allergy clinic and its associated hospital. At least half of such training must be in pediatric allergy. Three types of allergy clinics have been approved: (*a*) pediatric, (*b*) adult, and (*c*) mixed.

Two years of training in clinics of type (*a*) or (*c*), or one year in each, is acceptable. One year in (*b*) and the other in (*c*) is not acceptable. Please see Intern and Residency number of The Journal for listing of approved hospitals and associated clinics. In place of (2) the candidate may take (*3*).

(3) One year full-time training in an approved allergy clinic plus two years part-time training of at least 200 hours each year in an approved allergy clinic and hospital.

At least half of the total experience must be in pediatric allergy. Thus, training which consists only in a combination of (*b*) and (*c*) as defined above does not qualify.

OR

(4) Five years, part-time, or at least 200 hours each year, in an approved pediatric or mixed allergy clinic and its activities.

RESEARCH: If at least half of a candidate's qualifying full-time training is in clinical pediatric allergy, the remainder may be spent in supervised allergy research or in training in adult allergy at an approved clinic, or in a combination of the two.

PRECEPTORSHIP: Preceptorship alone is not acceptable, but part of a full-time training program (50% or less) may include supervised training in the private office of a qualified allergist, provided such an arrangement is part of the training program of an approved clinic and the preceptorship and clinic training run concomitantly.

CREDIT FOR COURSES: Established courses or seminars in Allergy and Immunology, which are attended during the training period, may be credited for part-time training. Instructions such as is given in these subjects by the American Academy of Pediatrics, the Academy of Allergy, or the College of Allergy are examples. Three hours of credit toward part-time training will be allowed for each hour of instruction, but not over 40 hours may be so credited each year.

The candidates should be prepared for oral and written examinations in the theory and practice of allergy. This will include immunology, atopy, allergy of infections, experimental hypersensitivity, the clinical manifestations of allergic disease, especially as they appear in infants and children, and also allergic factors that may be present in other diseases. They must be prepared to discuss diagnostic procedures and methods of treatment and the pharmacology of drugs and physiology of respiration as they relate to allergy and asthma. In controversial matters, they should be familiar with arguments on both sides of such questions.

CERTIFICATE

When accepted the diplomate will receive from the American Board of Pediatrics a certificate in pediatric allergy and will be listed as a specialist in pediatric allergy.

Prospective applicants for certification in the subspecialty of pediatric allergy may apply to the executive secretary of the American Board of Pediatrics.

PART-TIME TRAINING

All hospitals approved for full-time training in pediatric allergy are also approved for part-time training. In addition clinics of the following hospitals have been approved for *part-time* training:

Vanderbilt University Hospital, Nashville, J. Overall; Jackson Memorial Hospital, Miami, M. Marks, G. Berg; New York Hospital, New York, P. de Gara; Mt. Sinai Hospital, New York, H. Rappaport; Long Island Jewish Hospital, New York, D. Pearlman; D. C. General Hospital, Washington, D. C., R. Scott; University of Kansas Medical Center, Kansas City, Kansas, F. Speer; Children's Memorial Hospital, Chicago, G. Lanoff.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION

Robert L. Bennett, Chairman, Warm Springs, Ga.
William H. Schmidt, Vice-chairman, Philadelphia, Pa.
Arthur S. Abramson, New York
Donald A. Covalt, New York
Thomas F. Hines, New Haven, Conn.
O. Leonard Huddleston, Santa Monica, Calif.
H. Worley Kendell, Peoria, Ill.
A. B. C. Knudson, Washington, D. C.
Frederick J. Kottke, Minneapolis
Donald L. Rose, Kansas City, Kans.
Earl L. Elkins, Secretary-Treasurer, 200 First St., S. W., Rochester, Minn.

QUALIFICATIONS

A. Satisfactory moral and ethical standing in the profession.

B. A legal license to practice medicine in one or more of the states of the United States, its territories, the District of Columbia, or one or more of the provinces of Canada.

C. Graduation from a medical schoool approved by the Council on Medical Education and Hospitals or graduation from a foreign medical school which, in the opinion of the board, offers medical education equivalent to such an approved school; completion of an internship in a hospital approved by said Council.

D. A period of study after the internship of not less than three years in a residency approved by the above mentioned Council. This period of study shall include graduate training in basic science as related to physical medicine and rehabilitation and not less than two years of clinical training and experience in physical disabilities related to the fields of rheumatology, neurology, neurosurgery, orthopedics, and medicine.

E. An additional period of not less than two years in full time practice of physical medicine and rehabilitation.

Training in approved residency programs in closely allied medical-surgical fields may be acceptable in part (for D above), but such credit is limited and based on individual interpretation by the board.

In selected cases, a candidate may be deemed eligible for examination on the basis of eight years of full time practice in physical medicine and rehabilitation (as a substitute for D and E above).

EXAMINATION

The examination for certification is given in two parts. Part 1 is written, part 2, oral. Examinations are given once a year and cover certain aspects of the basic sciences and the clinical aspects of physical medicine and rehabilitation (including the role of associated personnel such as the physical therapist, occupational therapist, clinical psychologist, social service worker, and vocational guidance counselor).

APPLICATION

The application form shall contain a record of the candidate's premedical and medical education, internship, graduate study, and verification of full-time practice in the specialty. The application shall be accompanied by a fee of $75 if the candidate is applying for part 1 only, and by a fee of $125 if applying for parts 1 and 2. (In case of rejection of the application, evaluation fee of $25 will be retained by *the Board, and the examination fee will be refunded.)*

CERTIFICATION

Certificates of the board shall be issued to the effect that the applicant has been found qualified as a specialist in physical medicine and rehabilitation.

AMERICAN BOARD OF PLASTIC SURGERY

Clarence R. Straatsma, Chairman, New York City
Truman G. Blocker Jr., Vice-chairman, Galveston, Tex.
Leslie H. Backus, Buffalo
Herbert Conway, New York City
Reed O. Dingman, Ann Arbor, Mich.
John B. Erich, Rochester, Minn.
William H. Frackelton, Milwaukee
James B. Johnson, Beverly Hills, Calif.
Edward A. Kitlowski, Baltimore
J. J. Longacre, Cincinnati
Gerald B. O'Connor, San Francisco
Kenneth L. Pickrell, Durham, N. C.
Henry P. Royster, Philadelphia
Charles F. Steiss, San Francisco
Frank McDowell, Secretary, St. Louis, Mo.
Mrs. Estelle E. Hillerich, Corresponding Secretary, 4647 Pershing Ave., St. Louis 8, Mo.

GENERAL REQUIREMENTS

1. Moral and ethical standing in the profession satisfactory to the board.

The board, believing that the practice of "fee splitting" is pernicious, leading as it does to traffic in human life, will reserve the right to inquire particularly into any candidate's practice in regard to this question.

2. Those whose activities are limited to the practice of plastic surgery.

3. This board will accept as applicants for examination only those who are full citizens of the United States or Canada. Notarized statements, not original citizenship papers, attesting to the fact of full citizenship in the United States or Canada must be furnished by foreign-born applicants when the application is filed. Such candidates must have at least two years of practice in plastic surgery in North America after completing the training required by the board.

PROFESSIONAL REQUIREMENTS

The board considers the requirements outlined below to be minimal in attaining its purposes and encourages candidates to take advantage of broadening experience in other fields. Candidates must fulfill the requirements that are in force at the time of their examination and/or certification.

1. Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association, or graduation from a foreign school considered acceptable by the board.
2. Completion of an internship of not less than one year in a hospital approved by the same Council.
3. Two years of postgraduate work in general surgery, beyond the intern year, as a resident or an assistant resident in a hospital approved by the same Council. This requirement will be increased to three years for those candidates who start their residencies or preceptorships in plastic surgery on or after July 1, 1960.
4. Training in general plastic surgery, including maxillofacial surgery, for an additional period of not less than two years in a residency approved by the same Council, or in a preceptorship approved by the Board. In fulfilling this requirement, there is a limit of one year's credit given for all work done in all governmental plastic surgery residencies (Army, Navy, Veterans Administration hospital, etc.) regardless of the time put in by trainees in such residencies. It is required that all such trainees take one additional year of approved training in plastic surgery in a civilian residency or preceptorship.
5. During these years of training following the internship year, a candidate must hold positions of increasing responsibility for the care and management of patients with surgical conditions. When a candidate receives his training in more than one institution, it is equally imperative that he hold positions of increasing responsibility. He must have sufficient operative experience to acquire surgical skill and judgment through the performances of surgical operations with a high degree of responsibility, but under circumstances providing adequate opportunity for consultation and advice.
6. An additional period of not less than two years of practice in plastic surgery. If a candidate elects to spend one or two additional years in approved training in plastic surgery, one year of such training will be credited toward the required two years of private practice if it can be demonstrated that the candidate held a position of increasing responsibility. It is imperative that one year be in actual private practice in such instances.

The Board gives credit only for training in plastic surgery received in the United States or Canada but may, at its discretion, give credit towards the required private practice period for training in plastic surgery received in countries other than the United States and Canada, each case being determined individually.

Educational Council for Foreign Medical Graduates.—The American Board of Plastic Surgery will accept the certificate of the ECFMG as evidence that the holder thereof is possessed of medical knowledge comparable to that expected of graduates of approved medical schools in the United States or Canada.

The above training in plastic surgery may be taken as a resident in an approved hospital or under an approved preceptorship offering equivalent training (a list of currently approved preceptorships is available from the board office).

The period of special training should emphasize the relation of the basic sciences—anatomy, pathology, physiology, biochemistry, bacteriology—to the application of surgical principles which are fundamental in all branches of surgery, and especially to plastic surgery. In addition, the candidate must understand and be trained in the following subjects: the care of emergencies, shock, hemorrhage, blood replacement, electrolyte and fluid balance, choice of anesthetics, chemotherapy, acidosis and alkalosis, narcotics and hypnotics, wound healing, etc.

The board reserves the privilege of requesting lists of operations done solely by the candidate for one or more years, or of requesting special and extra examinations, written or oral and practical, and of requesting any specific data concerning the candidate that may be deemed advisable before making final decision for certification.

Eligibility rulings or an evaluation of a candidate's qualifications or training cannot be made by the secretary or by any one member of the board. Official evaluations of qualifications are made only by the committee on credentials and requirements or by the entire board where necessary after a review of the candidate's formal application for such rulings. The applicant must allow at least two months for such requests to make the rounds of the committee.

Beginning in 1960, the Board will issue special Foreign Certificates to qualified foreigners who have completed two or more years of approved training in plastic surgery in the United States or Canada and who have passed the examinations of the Board. Such foreign Certificates will not be valid in the United States or Canda, but are for use in the respective foreign countries where the men are citizens and where they will practice plastic surgery. Requirements for the Foreign Certificates may be obtained in detail from the Office of the Board.

TRAINING FACILITIES

Residencies.—The American Board of Plastic Surgery does not assume the responsibility for independent inspection and approval of residency programs in plastic surgery, but recognizes those residencies in plastic surgery approved by the Residency Review Committee in Plastic Surgery. This Committee is a tripartite body composed of representatives from the Council on Medical Education and Hospitals of the American Medical Association, from the American College of Surgeons, and from the American Board of Plastic Surgery, the secretary of the committee being a member of the Council on Medical Education and Hospitals of the American Medical Association.

Any diplomate of the Board desiring approval of a residency program of training under his supervision should apply, or have his hospital administrator apply, to the Residency Review Committee in Plastic Surgery, c/o Council on Medical Education and Hospitals of the American Medical Association, 535 No. Dearborn St., Chicago 10, Illinois. He will be sent a regular application blank to be filled out and returned to that committee. The committee will appoint inspectors to go to the hospital to inspect the program. The question of approval will then be considered at the next semi-annual meeting of the Residency Review Committee and the applicant informed of the result. It usually takes a period of six to twelve months to process an application.

A list of approved residencies in plastic surgery is published annually in the Internship and Residency Number of The Journal of the American Medical Association and in the Bulletin of the American College of Surgeons. The list may also be obtained from the Office of the Board, but the Board assumes no responsibility for placing men who wish to enter training and does not keep a list of openings in training programs. Such men should apply directly to the chiefs of residency programs in which they might be interested, or to the chiefs of preceptorship programs, to ascertain if openings exist and if they will be accepted to fill such openings.

Preceptorships.—In certain instances the Board will accept, in lieu of the required two years' training in an approved residency, training in a preceptorship program approved by the Board. A list of the existing preceptorship programs may be obtained from the Office of the Board. The chiefs of these preceptorship programs have been urged to convert the programs into approved residencies when the local situation permits, since the aim of the Board is to approve training in residencies only and not in preceptorship programs.

All trainees, whether residents or preceptees, must submit an annual report to the Board of the training being received. Report forms for this purpose may be obtained from the Office of the Board upon request.

It should be kept in mind by all that the primary interest of the board is to encourage well-rounded training in plastic surgery with the aim of producing plastic surgeons capable of doing good work in the wide variety of cases which may come under their care. The standards set up by the board both for preliminary general surgery and for specialized plastic surgery training, are established in an effort to further this aim. The quality of the training received should be reflected in the candidate's ability to achieve good results in his practice, and the examinations of the board are an attempt to judge the ability of the candidate in the specialty of plastic surgery.

Before training in plastic surgery is begun, the plastic surgeon in charge of the residency or preceptorship should ascertain that the trainee's preliminary training in general surgery meets the requirements of the board, that is, two years of residency training in general surgery after the internship year.

The training in plastic and maxillofacial surgery (at least two years) whether in a residency or a preceptorship, should cover a wide field of plastic surgery, both as to type and anatomic distribution. It should include experience in the treatment of congenital and acquired defects and deformities of the face, neck, body, and extremities, for both functional and esthetic reasons. There should be available sufficient material of a diversified nature so that the trainee will be able to pass the examinations of the board after the period of training and the two additional years of private practice. If the available material on one service is inadequate, the deficiency should be made up by affiliation with another plastic surgeon on another service so that a broad experience will be obtained in plastic surgery. The trainee should be provided an opportunity to operate under the direct supervision of the plastic surgeon in charge, and with increasing ability, should be given an opportunity to operate independently on suitable cases under more remote supervision.

MILITARY CREDIT

Credit for military service is given on an individual basis, each case being considered on its own merits, and the amount of credit allowed is determined by the board when the information is submitted with the application.

The Medical Officer's Professional Training Record (DD Form 408) is a record maintained by individual Medical Corps officers for presentation to the various authorized accrediting boards toward certification. This record is presented by the officer to the boards for evaluation of the military experience acquired by Medical Corps officers while serving in the Army Medical Service. This form has been prepared by the surgeons general of the armed services with the assistance of the Council on Medical Education and Hospitals of the American Medical Association and is distributed by the offices of the Surgeons General to their personnel. It is highly important that prospective applicants obtain a copy of this form and that it be submitted with their credentials for evaluation by the board.

CASE REPORTS

Upon approval by the board of a candidate's application for certification, each candidate is required to submit to the board 35 or more case reports illustrative of his independent work in the field of general plastic surgery.

Candidates are admitted to examination only after submitting case reports that meet the required standards of the board and that have been approved by the committee on credentials and requirements.

Case reports must be submitted within one year from the time of such request; otherwise a new application must be filed. The case reports shall conform to conditions which the board may from time to time specify.

Case reports must be received in the office of the board by January 1 for those who desire to be considered for the spring (May-June) examinations of the board and by July 1 for the fall (October-November) examinations. There will be no exceptions to these two deadlines.

The 35 case reports must be of a diversified nature and must be submitted to the office of the board together with before and after photographs. They should be of the following distribution:

1. Cleft lip: 1 to 3 cases
2. Cleft palate: 1 to 3 cases
3. Traumatic defects requiring reconstructive surgery:
   (a) Face and neck: 2 to 4 cases
   (b) Body: 1 to 4 cases
   (c) Extremities: 1 to 6 cases
4. Acute burns: 2 to 4 cases
5. Fracture of facial bones, excepting nasal fractures: 1 to 3 cases
6. Esthetic operations of sufficient variety: 6 to 12 cases
7. Plastic surgery of the hand: 2 to 4 cases
8. Malignancies or conditions prone to malignancies (eradication and repair):
   (*a*) Face: 2 to 4 cases
   (*b*) Body: 1 to 3 cases
   (*c*) Extremities: 2 to 4 cases
9. Congenital anomalies: 1 to 6 cases
   (*a*) Examples:
   (1) Syndactylism
   (2) Congenital absence (partial or total) of external ear
   (3) Hypospadias
   (4) Bands (constricting)
   (5) Thyroglossal duct cyst
   (6) Extensive nevi, etc.

If the case reports and lists of operations are approved, the candidate will receive subsequent information regarding taking the examinations. The board at its discretion may request certification of case reports by the hospital where the operations were performed. The following form should accompany the case reports: "I hereby certify that the planning and essential surgical procedures described herein were carried out by me as an independent operator."

Every candidate's final acceptability for examination is based not only on the evaluation of his training qualifications but on his professional ability as a plastic surgeon, his ethical standing in the community, and the strict limitation of his work to plastic surgery.

A candidate should remember that these case reports are documentary evidence of his ability and that the material in them and the manner of presentation are important evidences of his ability.

In instances where a candidate submits case reports that do not meet the standards of the board, he will be required to submit additional case reports or an entirely new set of 35 within a period of one year. If this second series of new case reports again do not meet the standards of the board, the candidate may be required to take additional training (of length and type specified by the board) before he will be allowed to submit any further case reports.

After a candidate has been notified that he has fulfilled the preliminary requirements and that his case reports have been approved, he will be required to take the qualifying examination within a period of three years.

After approval of the case reports, and prior to the examination, the candidate will be visited at his place of practice by a member or members of the board to observe him operate and to examine a number of his preoperative and postoperative cases.

EXAMINATIONS

The qualifying examinations are given twice yearly, in the spring and fall. The spring examination is given immediately preceding, during, or following the annual meeting of the American Association of Plastic Surgeons (usually in May), and the fall examination is given immediately preceding, during, or following the annual meeting of the American Society of Plastic and Reconstructive Surgery (usually in October). Candidates are required to go to the designated center for the qualifying examination, which will last three days. These centers will be the city in which the meetings of these two organizations are held if the proper clinic and hospital facilities are available, otherwise in some nearby city where such material is available. Arrangements for all examinations are made by the examination committee.

A written examination will consume all of the first day and half of the second day. An oral and practical examination will consume the afternoon of the second day and all of the third day. The subjects of the written examination are (1) theory and practice of plastic surgery, (2) applied anatomy, applied physiology, (3) pathology, bacteriology, clinical laboratory methods (pharmacology), (4) reaction of tissue to injury, surgical accidents, anesthesia. A general oral examination pertaining to plastic surgery will be given. In the practical part of the examination, the examiner will present a group of patients for examination by the candidates, and the candidates will be quizzed on methods of procedure—diagnosis, treatment, technique, and so on. Slides of pre-operative conditions will be shown on a screen and the candidate asked to make a quick diagnosis of the items and to tabulate in the order of their importance the methods of treatment. Microscopic slides of the average pathological tissue falling within the province of the plastic surgeon will be given the candidates, and they will be asked to write a description and diagnosis.

GRADES

To be considered as passing, the candidate will be required to receive a grade of at least 65% in each portion of the written examination and an average grade of 75% on the entire written and oral examination.

CERTIFICATION

After a candidate has met the requirements for eligibility and passed the examinations of the board, a certificate attesting his qualifications in plastic surgery will be issued to him by the board, signed by its officers and having the seal of the board affixed thereto. It shall be the prerogative of the board to determine the fitness professionally and ethically of any candidate for its certificate, and the action or decision of the board regarding the certification of any candidate shall be final.

FEES

The fee for application and examination is $150. Of this sum, $25 must accompany the application, and the remaining $125 must be paid when the candidate is notified of acceptance for examination. There will be no refunds. This fee may be increased at the discretion of the board. The board is a nonprofit organization, and the fees of candidates are used solely for defraying the actual expenses of the board. The members of the board serve without remuneration. Because of the limited number of surgeons certified by this board it is necessary for a limited time to request a voluntary annual contribution of $15 from diplomates after the first year's certification to help defray expenses.

THE AMERICAN BOARD OF PREVENTIVE MEDICINE

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V. A. Van Volkenburgh, Vice-chairman for Public Health, Albany, N. Y.
Otis O. Benson Jr., Vice-chairman for Aviation Medicine, Randolph Air Force Base, Texas
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Tom F. Whayne, Secretary-Treasurer, 615 N. Wolfe St., Baltimore 5, Md.

ELIGIBILITY REQUIREMENTS FOR EXAMINATION

Each applicant for a Certificate in Public Health, Aviation Medicine, or Occupational Medicine is required to meet certain eligibility requirements and to pass an examination. Such eligibility requirements are set forth in the by-laws of the Board. For the information of applicants such requirements are briefly outlined below; but for a full statement thereof reference must be made to the by-laws, as from time to time in force, by which alone such requirements are governed:

GENERAL REQUIREMENTS

1. Good moral character and high ethical and professional standing;
2. Graduation from a medical school in the United States or Canada approved by the Council on Medical Education and Hospitals of the American Medical Association, or from a foreign school satisfactory to the Board;
3. A hospital internship of at least one year approved by the Council on Medical Education and Hospitals of the American Medical Association, or a foreign hospital internship satisfactory to the Board; and
4. Authority to practice medicine in a state, territory, commonwealth or possession of the United States or in a province of Canada.

SPECIAL REQUIREMENTS IN PUBLIC HEALTH

1. Successful completion (after internship) of at least one academic year of graduate study leading to the degree of Master of Public Health or an equivalent degree or diploma in a school of public health accredited for the purpose of such graduate study by the American Public Health Association; or training or study deemed by the Board to be substantially equivalent to such graduate study;
2. Residency (after internship) of at least two years of field experience in general public health practice, which included planned instruction, observation, and active participation in a comprehensive, organized, public health program approved by the Residency Review Committee for Preventive Medicine of the American Medical Association's Council on Medical Education and Hospitals and the Board; or an equivalent Canadian residency approved by the Board; one year of such period in both instances may be an approved clinical residency in a field directly related to public health;
3. A period (after internship) of not less than three years, in addition to 1 and 2 above, of special training in or teaching or practice of public health;
4. Three years of the experience outlined in 2 and 3 above must have been obtained within the five-year period immediately prior to application for certification; and
5. Limitation of practice to full-time teaching or practice of public health as a specialty.

SPECIAL REQUIREMENTS IN AVIATION MEDICINE

1. Successful completion (after internship) of at least two academic years of graduate study in preventive medicine and aviation medicine, one year of which graduate study shall be in a school of public health accredited for the purpose of such graduate study by the American Public Health Association and one year of which shall be in a school of aviation medicine accredited for the purpose of such graduate study by the Council on Medical Education and Hospitals of the American Medical Association; or training or study deemed by the Board to be substantially equivalent to such graduate study;
2. Residency (after internship) of at least one year of supervised experience in aviation medical practice, which included planned instruction, observation, and active participation in a comprehensive, organized program of aviation medicine;
3. Supervised practice of aviation medicine (after internship) of not less than one year, in addition to 1 and 2 above, of special training in or teaching or practice of aviation medicine;
4. A period (after internship) of not less than two years, in addition to 1, 2, and 3 above, of special training in or teaching, research, or practice of aviation medicine;
5. Three years of the experience outlined in 2, 3, and 4 above, must have been obtained within the five-year period immediately prior to application for certification; and
6. Limitation of practice to full-time teaching, research, or practice of aviation medicine.

SPECIAL REQUIREMENTS IN OCCUPATIONAL MEDICINE

1. Successful completion (after internship) of at least two academic years of graduate study in preventive and occupational medicine in a school of medicine, a university graduate school, a school of public health, or a combination of these schools, all of which must be accredited for such graduate study by the Council on Medical Education and Hospitals of the American Medical Association; or training or study deemed by the Board to be substantially equivalent to such graduate study;
2. Completion (after internship) of not less than one year, in addition to 1 above, of supervised experience in occupational medical practice in an industrial or medical organization, which shall have provided planned instruction, observation and active participation in a comprehensive program of occupational medicine; or a period of experience deemed by the Board to be substantially equivalent to such year of supervised experience;
3. A period (after internship) of not less than three years, in addition to 1 and 2 above, of special training in or teaching or practice of occupational medicine;
4. Three years of the experience outlined in 2 and 3 above must have been obtained within the five-year period immediately prior to application for certification; and
5. Limitation of practice to full-time teaching, research, or practice of occupational medicine.

APPLICATIONS FOR EXAMINATION AND REEXAMINATION

Each application for examination must be made on the prescribed form (which may be obtained from the Secretary of the American Board of Preventive Medicine), and must be filed with the Secretary, ordinarily not less than 90 days prior to the date of examination. It must be accompanied by the required documentation, application fee, and two recent, clear, unmounted, autographed photographs of the applicant, one of which should be attached to the application and the other unattached.

No member of the Board is authorized to give an opinion as to the eligibility of candidates. The determination of eligibility will be made only by the Board, after receiving full application information. Each candidate must comply with Board regulations in effect at the time the examination is taken and also those in effect at the time the certificate (if any) is issued, regardless of when his original application was filed.

An applicant declared ineligible for admission to examination may refile or reopen his application on the basis of new or additional information within two years of the filing date of his original application, without payment of an additional application fee.

An applicant declared eligible for admission to examination but who fails to submit to examination within three years of the date of the filing of his application is required to file a new application and to pay a new application fee.

Candidates failing the examination may, upon timely application and payment of appropriate fee, be admitted to reexamination within a specified period.

Candidates failing three examinations will not be admitted to subsequent examinations unless the Board so directs.

MULTIPLE CERTIFICATION

A person who has been certified in one affiliated specialty may apply for certification in another affiliated specialty; however, the applicant must meet in full the special requirements for each of the affiliated specialties in which he desires to be examined.

In determining whether the applicant meets such requirements, no period of training or experience, other than graduate study, will be taken into account if the same period shall have been taken into account in determining his eligibility for another affiliated specialty.

FEES

The application fee is $25. It must be submitted with application and is not refundable.

The examination fee is $100. It is payable when applicant is notified of acceptance for examination; if paid prior thereto, it is not refundable after such notification has been given.

No additional fee is payable for the issuance of a certificate.

Reexamination fees are: each part taken, $25; examination fees, additional affiliated specialty, each $50.

EXAMINATIONS

Examinations will be held from time to time and in various places depending upon need as indicated by applications received. Examinations in some instances will be held in connection with the annual meetings of the nominating organizations and also may be held at other times and at other places so located geographically as to minimize travel for the applicants.

The written examination consists of two parts:

Part one is a comprehensive written examination designed to test the knowledge of the applicant in the basic principles of preventive medicine. Part two is a comprehensive written examination designed to test the knowledge of the applicant in the special field in which he requests certification.

An oral or practical examination is also required, which usually will be held at the completion of the written examination. An endeavor will be made to adapt the details of the oral or practical examination to each candidate's experience and practice.

Candidates for certification in a second or third affiliated specialty will be required to pass only that portion of the written examination relating specifically to such field.

The examiners will report upon each candidate to the assembled Board, by which the result of the examination will be considered.

AMERICAN BOARD OF PROCTOLOGY

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J. Edwin Alford, Buffalo, N. Y.
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Clifford E. Hardwick, Portland, Ore.
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R. A. Scarborough, San Francisco
Karl Zimmerman, Pittsburgh
Stuart T. Ross, Secretary, 520 Franklin Ave., Garden City, N. Y.

QUALIFICATIONS AND REQUIREMENTS

General

All candidates shall comply with the following regulations:

1. A candidate shall possess moral, ethical, and professional qualifications acceptable to the Board.
2. He shall possess full citizenship in the country in which he practices.
3. He shall limit his practice to proctology, shall appear personally before the Board, and shall submit to the required examinations.
4. He shall deliver to the Board upon request an official record of patients hospitalized by him during the year prior to the date of submission of the application.
5. He shall submit a bibliography of papers and books published by him.

PROFESSIONAL QUALIFICATIONS

1. He shall be a graduate of a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association.
2. He shall possess a license to practice medicine in the country of his residence.
3. He shall have completed an internship, preferably of the general rotating type, of not less than 12 months in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association.

SPECIAL PROFESSIONAL QUALIFICATIONS

1. He shall have completed a minimum of three years of an approved general surgical residency and one of the following:

(*a*) Two years of a proctologic residency approved by the Board; or

(*b*) Two years of a proctologic preceptorship approved by the Board.

2. Applicants who present evidence of exceptional training and experience in colonic and rectal surgery during their three years of training in general surgery may, upon special application and approval by the Board, be accepted for examination following one year of approved training in Proctology.

APPLICATIONS

Each candidate for examination shall submit an application prepared upon the prescribed form which may be obtained from the Secretary of the Board. It shall contain a record of the candidate's premedical and medical training, internships, residencies, precepteeships, other postgraduate study, hospital and dispensary appointments, teaching positions, service in the armed forces, service in federal, state or local government, membership in medical societies, and any additional information considered valuable by the Board.

The application shall be signed by two proctologists. It shall be accompanied by two unmounted autographed recent photographs of the candidate, letters of endorsement from appropriate sources and the application fee. It shall be filed with the Secretary not less than 90 days prior to the date of examination.

EXAMINATIONS

Examinations are conducted at times and places determined by the Board and are announced in The Journal of the American Medical Association.

Seventy-five per cent is the passing grade on all examinations.

Examination papers are identified only by numbers and the examiners do not know the identity of the examinees.

Part 1: This consists of a comprehensive written examination in the basic science, including anatomy, physiology, pathology, bacteriology, and biochemistry. The examination is held in the fall of the year simultaneously in several cities of the United States.

Upon approval of the American Board of Proctology, candidates who have been certified by the American Board of Surgery and who have completed required training in proctology may not be required to take part 1 of the examinations of the American Board of Proctology.

Part 2: This is a practical examination which is held in the community in which the candidate conducts his professional activities. (It may be omitted at the discretion of the Board, in which case the candidate will be notified by the Secretary.) It is endeavored to arrange the examination at a time suitable to both the candidate and the examiner. The examination includes the inspection of:

1. Surgical operations.
2. Hospital rounds.
3. Hospital and office records.
4. Office practice.

Part 3: This consists of comprehensive written and oral examinations on the theory and practice of proctology and includes roentgenologic interpretation. The examination is usually held in the fall of the year in one designated city of the United States. The candidate is not admitted to part 3 examinations until he has completed the requirements of part 2.

The oral portion of the examination is conducted by members of the Board or its designated examiners. An attempt is made to ascertain the candidate's knowledge of current proctologic literature, his knowledge of the basic sciences, and the extent of his clinical experience and other qualifications.

FEES

Application fee: A fee of $25 shall accompany the application.

Examination fee: A fee of $150 is due and payable when the candidate is notified that he has been approved for examination.

No fee shall be returned to the candidate without Board approval.

All fees shall be made payable to the American Board of Proctology and shall be sent to the secretary.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY

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David A. Boyd Jr., Secretary-Treasurer, Rochester, Minn.

APPLICATION FOR CERTIFICATION

An application, in order to be considered at any meeting of the Board, must be in the hands of the Secretary of the Board not less than 90 days before the date of such meeting. A proper application form may be obtained from the Secretary. Application may be made for certification in psychiatry or in neurology or in both fields. Applications will be formally considered only when made on the official application blank in such form as may be adopted from time to time by the Board and when accompanied by an application fee in such amount as may be fixed by the Board.

The Secretary of the Board, upon receipt of an application shall forthwith make inquiries from those to whom the candidate refers and from such other persons as the Secretary may deem desirable and shall verify the candidate's record from the biographical records of the American Medical Association, after which he shall forward the application to the Committee on Credentials. This Committee shall consider the application and other information available and notify the Secretary whether the application is accepted. The certification of a candidate in either psychiatry or neurology, or both, shall be approved by a majority of the members of the entire Board at any meeting held for such certification.

FORM OF CERTIFICATION

There shall be separate certification in psychiatry and in neurology and two certifications or a combined certification for those qualified in both fields. The certification shall be in such form as is approved by the Board of Directors.

GENERAL REQUIREMENTS FOR APPLICANTS

Each application for a certificate must establish that:

(*a*) He is a physician duly licensed by law to practice medicine.

(*b*) He is of acceptable ethical and professional standing.

(*c*) He is now a member of the American Medical Association. Exceptions to the foregoing may be made at the discretion of the Board for good and sufficient reasons.

(*d*) He has satisfactorily completed adequate training in psychiatry or neurology, or both, as a specialty.

CLASSES OF APPLICANTS

CLASS A

Applicants who graduated from an approved medical school before the foundation of the Board (1934) will not be held to the strict interpretation of the published requirements in formal graduate training. Under such circumstances the Board will consider the training and experience of the applicant and decide whether or not he will be admitted to the examinations. For such graduates the Board will consider ten years of full-time acceptable experience in psychiatry or neurology in lieu of the formal training requirements. Should the candidate then apply for supplementary certification, the Credentials Committee will require five years of additional acceptable experience in the supplementary field.

CLASS B

Applicants who graduated from an approved medical school after 1934 shall fulfill the following special requirements.

PROFESSIONAL EDUCATION

1. Graduation from a medical school in the United States or Canada approved by the Council of Medical Education and Hospitals of the American Medical Association. In the case of an applicant whose medical training has been received outside the United States and Canada, such training must be satisfactory to the aforementioned Council.

2. Satisfactory completion of a year's internship approved by the same Council in General Medicine, General Surgery, Pediatrics or a rotating service.

3. The nine-month wartime internships will be accepted as an equivalent of one year.

SPECIALIZED TRAINING

Admission to the examination for certification in psychiatry or in neurology requires a total of five calendar years of training and experience, three years of which must be specialized training satisfactorily completed in approved training centers, plus two years of experience.

Admission to the examination for certification in both psychiatry and neurology requires a total of six calendar years of training and experience, five years of which must be specialized training satisfactorily completed in approved training centers, plus one year of experience. The specialized training may be subdivided into two and one-half years each in psychiatry and neurology or three years in one subject and two years in the other. The required years of experience should be spent in clinical practice with major responsibility for the care of patients.

All applicants who wish to qualify for examination for certification in Psychiatry or Neurology under the regulations relating to training credit and who began training on or after July 1, 1956, must show that at least 24 months of their residency training have been secured in residency training programs approved for at least two years of residency training in the specialty in which they seek certification.

The training for psychiatrists should include clinical work with psychoneurotic and psychotic patients, combined with the study of basic psychiatric sciences, medical and social psychology, psychopathology, psychotherapy, and the physiological therapies, including a basic knowledge of the form, function and pertinent pathology of the nervous system. The training should be supervised and guided by teachers competent to develop skill and understanding in the utilization of such basic knowledge in dealing with patients. Mere factual knowledge is not sufficient. This training period should include instruction in the psychiatric aspects of general medical and surgical conditions and the behavior disorders of children and adolescents sufficient to develop practical ability to direct the treatment of such conditions. It should also include collaborative work with social workers, clinical psychologists, courts, and other social agencies. The training program of the candidate for certification in psychiatry should include sufficient training in neurology to enable him to recognize and to evaluate the evidences of organic neurological disease.

The training for neurologists should be based on clinical work with adults and children with neurological disorders, including the neurological complications of medical and surgical conditions. This should be combined with study of the basic neurological sciences, neuroanatomy, neurophysiology, neuropathology, and neuroroentgenology. This training should be supervised and guided by teachers competent to develop skill and understanding in the utilization of such basic knowledge in dealing with patients. Mere factual knowledge is not sufficient. This training should include sufficient training in psychiatry to enable the candidate to recognize and evaluate the common psychiatric reactions.

The Board offers the foregoing two paragraphs as an outline of desirable training. If, however, the candidate has evidence of equivalent qualifications of training and experience not in the pattern here formulated, this evidence with appropriate documentary support may be included in his application for evaluation and possible approval by the Board.

Candidates seeking certification in both neurology and psychiatry, or supplementary certification in one after being certified in the other, must submit evidence satisfactory to the Board of an additional two years of fulltime basic training in the supplementary specialty.

Thus, no candidate is eligible for examination by the Board until he has completed at least five years of special training and experience in neurology or in psychiatry for a single certificate, or at least six years of special training and experience in neurology and psychiatry for certification in both neurology and psychiatry.

The Board will give not more than six months of credit for not less than six months of training in an approved training center for Internal Medicine or Pediatrics in lieu of six months of experience to candidates for the certificate in psychiatry or neurology but not to candidates for certification in both psychiatry and neurology.

The Board will give credit for one year of training in Child Psychiatry providing it is the third year of the required three years of special training required by the Board and providing it is taken in a center approved by this Board for training in Child Psychiatry. After July 1, 1956, training credit for work in the field of Child Psychiatry may be gained only by participation in a hospital residency training program that is regularly approved. After that date, all independent training approval of psychiatric clinics for children is discontinued.

The lists of training programs approved by this Board and by the Council on Medical Education and Hospitals of the American Medical Association may be found in the current issues of the Educational Number of The Journal of the American Medical Association.

TRAINING IN THE ARMED FORCES

Training and experience credit toward requirements for examination will be granted for military duty in the Korean emergency under certain conditions. This policy relates to active military medic duty since July 1, 1950. One year of training credit will be granted for one year spent in full-time psychiatric and/or neurologic duties. Additional training credit will be granted for that amount of time spent in approved training programs. Experience credit will be granted for any remaining time spent in full-time psychiatric and/or neurologic assignments. Double credit will not be granted for any single period of time.

For military duty after January 1, 1954, only experience credit will be granted for full-time psychiatric and/or neurologic duties. Training credit will be granted for residency assignments in regularly approved training programs.

Training credit for full-time psychiatric and/or neurologic assignments in unapproved military programs or services between the dates of January 1, 1950 and January 1, 1954, was terminated as of January 1, 1959.

EXAMINATIONS

Dates and places of examinations shall be set by the Board at its discretion and shall be announced in The Journal of the American Medical Association, in the *American Journal of Psychiatry*, in the *Journal of Nervous and Mental Diseases*, and in the *Archives of Neurology and Psychiatry*.

Though the purpose of the examination is to test the competence of the candidate in psychiatry or neurology or both, it must not be forgotten that both these medical disciplines constitute part of the broad field of general medicine. The Board requires some proficiency in neurology on the part of those it certifies in psychiatry and vice versa, but examines the candidate in accordance with the certificate he seeks. The examinations will be of such type that no adequately trained person will fail, and yet they will be sufficiently searching so that the specialist in fact may be separated from the specialist in name. The practical examination will include the examination of patients under the supervision of the examiner. The manner of examining patients, and the reasoning and deductions therefrom, will constitute an important part of the examination. Oral and practical examinations will be given in the basic sciences with special regard to their clinical implications. Written examinations may be given at the discretion of the Board. The examination for certification in psychiatry will differ from the examination for certification in neurology.

PAYMENT OF FEES

The candidate upon filing his application shall accompany it with an application fee of $50.00, which is not returnable. If a preliminary written examination has been decreed, an additional $25.00 fee will be required at the time of the applicant's acceptance. When notified by the Secretary that he is accepted for the oral and practical examination, the candidate shall send to the Secretary an examination fee of $75.00. A candidate who has been certified in either psychiatry or neurology and who has been admitted to supplementary examination for the other certificate shall pay an additional examination fee of $75.00.

A candidate who has failed in one examination is eligible for re-examination within one year upon payment of a re-examination fee of $75.00. After the year has elapsed, he must submit a new application and pay new application and examination fees. If he fails the re-examination, he may, after two years have elapsed, submit a new application and $50.00 fee, present evidence of further training, and pay an examination fee of $75.00.

A candidate who fails in one or two subjects is eligible for re-examination in those subjects within one year upon payment of a re-examination fee of $50.00. After the year has elapsed he must submit a new application and pay new application and examination fees and repeat the entire examination. If he fails the re-examination, he may apply again for the complete examination after two years upon submission of evidence of further training and upon payment of an application fee of $50. If admitted to the examination, he must pay a new examination fee of $75.

Any candidate who finds himself unable to attend an examination to which he has been admitted and does not notify the Secretary at least three (3) months before the date of the examination will forfeit his examination fee. Any candidate who fails to appear for examination within a period of three (3) years following the date of notification of eligibility for examination shall be required to submit a new application and pay the attendant fee. If a candidate dies before his certificate is issued, all fees will be returned to his estate.

Beginning January 1, 1958, all unused examination fees, or portions of examination fees, on deposit in the Board Office will be forfeited by the Candidate to the Board when the application lapses by going out of date. Further, all unused examination fees, or partial, unused examination fees, deposited before the date of January 1, 1952, were automatically forfeited by the candidate to the Board on January 1, 1958.

THE AMERICAN BOARD OF RADIOLOGY

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Douglas Quick, New York
Ernest H. Wood, Chapel Hill, N. C.
H. Dabney Kerr, Secretary, Kahler Hotel Bldg., Rochester, Minn.

CERTIFICATES

A certificate granted by this board does not of itself confer, or purport to confer, any degree, or legal qualifications, privileges, or license to practice radiology. Certificates of the board shall be issued in one of three categories:

1. Radiology: that branch of medicine which deals with the diagnostic and therapeutic application of radiant energy including roentgen rays, radium and radioisotopes.
2. Diagnostic Roentgenology: that branch of radiology which deals with the diagnostic application of roentgen rays.
3. Therapeutic Radiology: that branch of radiology which deals with the therapeutic application of roentgen rays, radium and radioactive isotopes.
4. Radiological Physics: that branch of physics which deals with the medical application of roentgen rays, gamma rays, radioisotopes, nuclear reactions, and particle accelerators.
5. Roentgen-ray and Gamma-ray physics: that branch of radiological physics which deals with roentgen rays and gamma rays.
6. Medical Nuclear Physics: that branch of radiological physics which deals with radioisotopes, nuclear reactions and particle accelerators.

GENERAL REQUIREMENTS AND QUALIFICATIONS

Each applicant shall be required to present evidence that he has met the following standards:

1. Satisfactory moral and ethical standing in the profession.
2. A license to practice medicine in the state or county in which he resides.
3. Holds himself out to be a specialist in radiology or one of its branches as defined and devoted his time to the practice of radiology or one of its branches.
4. He is a citizen of the United States or Canada. A candidate from another country must be a permanent resident of that country and a citizen thereof.

PROFESSIONAL EDUCATION

1. Graduation from a medical school recognized by the Council on Medical Education and Hospitals of the American Medical Association.
2. Completion of an internship of not less than one year in a hospital approved by the same Council. After completion of the internship, there shall be a period of special training (length of time as indicated below) in an approved department of radiology.

Radiology: Those beginning their training before July 1, 1956, must have three years formal residency training in an approved department of radiology.

Those beginning their training on July 1, 1956, or thereafter must have three years formal residency training in an approved department of radiology plus an additional year of either further training or practice. The three-year training period must include the equivalent of six months (total) in pathology and isotopes. If the candidate does not wish to be examined in Nuclear Medicine, he must have three months of Pathology.

Diagnostic Roentgenology: Those beginning their training before July 1, 1956, must have two and one-half years formal residency training in an approved department of radiology. The equivalent of six months of time must have been devoted to Pathology.

Those beginning their training on July 1, 1956, must have two and one-half years formal residency training in an approved department of radiology (the equivalent of six months of which time must have been devoted to Pathology) plus an additional year of either further training or practice.

Those beginning their training on July 1, 1957, or thereafter will be required to take three years formal residency training in an approved department of radiology plus an additional year of either further training or practice. The three year training period must include the equivalent of three months of training in Pathology.

Therapeutic Radiology: Those beginning their training before July 1, 1956, must have two and one-half years formal residency training in an approved department of radiology. The equivalent of six months of this time must have been devoted to Pathology.

Those beginning their training on July 1, 1956, must have two and one-half years formal residency training in an approved department of radiology (the equivalent of six months of which time must have been devoted to Pathology) plus an additional year of either further training or practice.

Those beginning their training on July 1, 1957, or thereafter will be required to take three years formal residency training in an approved department of radiology. They will also be required to take an additional year of either further training or practice. Those applying for therapeutic radiology alone must show evidence of personal experience in the use of intracavitary and interstitial radium or equivalent sources, as well as proficiency in roentgen therapy.

Prior to July 1, 1960, those candidates desiring to be certified in either radiology or therapeutic radiology will be urged to take an examination in nuclear medicine.

Those candidates previously certified in roentgenology desiring to complete their certificates in radiology (including nuclear medicine) will be required to have the equivalent of six months full-time radium and isotope training in an approved department of radiology.

Prior to July 1, 1960, those candidates who have been previously certified in roentgenology and who do not desire to be examined in nuclear medicine must have the equivalent of three months full time radium training in an approved department of radiology.

EXAMINATIONS

Usually two examinations are held each year. At present, examinations are practical and oral. The examinations are designed to test the candidate's fitness to practice radiology or one of its branches as a specialty.

The examination consists of tests in film interpretation and an oral examination in pathology, physiology, radiophysics, and radiobiology, as well as the clinical application of roentgen rays, radium, and radioactive isotopes. The applicant is also examined in "professional adaptability," in an attempt to ascertain his attitude toward his fellow practitioners and his patients.

THE AMERICAN BOARD OF SURGERY

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REQUIREMENTS FOR ADMISSION TO EXAMINATION
GENERAL QUALIFICATIONS

An ethical standing in the profession and a moral status in the community which are satisfactory to the Board.

Engagement in the practice of surgery.

PRELIMINARY TRAINING

Graduation from an approved medical school in the United States or Canada or from medical schools acceptable to the Board in other countries.

Completion of an internship (straight or rotating) of not less than one year in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association or its equivalent in the opinion of the Board.

SPECIAL TRAINING

The American Board of Surgery is guided by the evaluation of residency training programs made by the Conference Committee on Graduate Training in Surgery and does not itself conduct such surveys.

The Board interprets the term "general surgery" in a comprehensive manner and expects candidates to have knowledge of the basic principles applied in the management of fractures, head injuries, or other forms of trauma, and of the more common problems in plastic, gynecologic, orthopedic, neurologic, thoracic and urologic surgery.

Basic Sciences

It is fundamental to the concept of an approved residency in general surgery that the program provide for properly organized, integrated, and progressively graded clinical training in this specialty. This presupposes a continuity of clinical experience under the supervision of the surgical staff of the hospital or hospitals in which such training is conducted. Accordingly, while recognizing the value of formal courses in the study of surgery and the basic sciences at approved graduate schools of medicine, the Board will not accept these courses as part of a three or four-year residency program in lieu of clinical experience. Furthermore, the integration of basic sciences, particularly pathology, with clinical training is considered superior to formal courses in these subjects.

Senior Year

The most important single factor in the development of a surgeon is the opportunity under guidance and supervision to grow by progressive and succeeding stages to the stature of complete responsibility for the surgical care of patients. Major operative experience and senior responsibility are an essential part of surgical education and training. For this reason the Board cannot accept for examination candidates who have not had such experience in general surgery, regardless of the number of years in training.

Since a majority of residency training programs do not provide a sufficient accretion of operative experience and personal responsibility until the completion of the senior or final year, the Board requires that the candidate have had this senior year in order to become eligible for examination. Because it is recognized that some flexibility and well-considered experimentation are essential to progress in surgical, as well as other forms of education, the Examination Committee of the Board is prepared to give individual consideration to applicants whose training in general appears adequate although it may not meet all of the following specified requirements.

TYPES OF PROGRAMS

The requirements for examination may be fulfilled by either of two programs. These are considered to be minimal in attaining the purposes of the Board and do not preclude additional desirable educational experiences which may strengthen the individual residency training program.

The Board may at its discretion, require that a member of the Board, or other designated diplomate, observe and report upon the clinical performance of the candidate before considering his eligibility for examination or certification.

The Board reserves the right to require a candidate to submit a list of the operative procedures performed by him during his training period.

Group 1 Program

Completion of a graded residency in general surgery of at least four years' duration, including the senior year, in an institution or institutions acceptable to the Board and approved for four years of training by the Conference Committee on Graduate Training in Surgery is required.

An approved four-year residency may include a research project or an assignment to a basic science department such as pathology, physiology, or anatomy, provided this is an integral part of the program. The program must include at least three years of clinical surgery.

The Board accepts training of not more than one year's duration in "affiliate hospitals" as part of its basic formal educational requirements. Such "affiliate hospital" training must have been part of the graded residency program of an institution approved for four years by the Conference Committee. The senior year must have been spent in the parent institution holding the approval of the Conference Committee, except in those instances where the senior year in the "affiliate hospital" is, in the opinion of the Conference Committee, equivalent in training value to the senior year in the parent institution and is under the same supervision.

The candidate who completes only four years of an approved program designed for more than four years, and thus does not have the senior or final year of the residency, may submit his qualifications for special consideration by the Examination Committee of the Board. The Committee can recommend acceptance of the candidate for examination in Group 1 or Group 2, provided the evidence indicates the candidate has had adequate operative experience and clinical responsibility as certified by the Chief of Service.

Residency credit will be granted for surgical internship to a candidate who has completed a prior year of acceptable internship when the surgical internship is part of a graded program approved for four years by the Conference Committee.

Group 2 Program

Completion of a graded residency in general surgery of at least three years' duration including the senior year, in an institution or institutions acceptable to the Board and approved for at least three years of training by the Conference Committee on Graduate Training in Surgery is the basic requirement.

Residency credit will not be granted for separate periods of time devoted exclusively to research or a preclinical discipline although the day to day integration of these disciplines with clinical surgery is highly desirable. The program must have included three years of clinical surgery and the final year must have been spent in the capacity of senior or chief resident in general surgery.

Two additional years of training beyond the three years of residency to complete a total of five are necessary to meet the requirements for examination. These may include:

(*a*) Practice of surgery under acceptable supervision (preceptorship). By "acceptable supervision" is meant an arrangement with a preceptor acceptable to the Board who should inform the Board in writing of his willingness to assume responsibility for the candidate's further training. Before the candidate's eligibility for examination can be considered, he will be required to submit to the Board a list of the operative procedures performed by him during the period of supervised practice, and the preceptor will be requested to vouch for the candidate's integrity, surgical judgment, and technical skill. The acceptance of supervised practice in fulfillment of part of the Board's requirements will be contingent upon the candidate's having had adequate clinical opportunities to fortify residency training and considerable responsibility in the care of patients, including the performance of major operative procedures under supervision.

(*b*) The study of surgery and the basic sciences in an approved graduate school of medicine on a full-time basis and for a consecutive period of not less than one school year. Training credit in excess of twelve months will not be granted in this category.

If provision has been made to study a single basic science such as pathology, physiology, or anatomy, up to six months' credit may be granted for such study.

Credit may be granted for a maximum of twelve months spent in full-time surgical research under a responsible investigator who is acceptable to the Board. A candidate may not claim credit for both graduate study and research years.

(*c*) Further acceptable surgical residency or fellowship training, either in general surgery or in a recognized surgical specialty.

N.B.: Credit as outlined above under (*a*), (*b*), and (*c*) will be applicable only toward the two years of training which Group 2 candidates must complete in addition to three years of approved residency in general surgery. It will not be considered as basic residency credit.

MILITARY CREDIT

Credit not to exceed one year may be granted to those candidates who have served in military hospitals other than those approved for residency training, provided that the candidate has had a satisfactory surgical assignment with adequate and diversified clinical material and provided further that his work in surgery is carried out under the supervision of a surgeon acceptable to the Board. Any such credit will be considered preceptorship credit toward Group 2 re-requirements and not basic residency credit.

LICENSE TO PRACTICE

The Board requires, prior to issuance of a certificate, that candidates have a valid license to practice medicine except in those situations in the United States or Canada in which a license to practice is not required, such as the practice of surgery by commissioned officers in the Army Navy, or Public Health Services of these countries.

FOREIGN TRAINED CANDIDATES

In exceptional instances and after individual evaluation, the Examination Committee of the Board may grant some credit for foreign training.

APPLICATIONS

Prospective candidates for examination by the Board should carefully read the Board's requirements as set forth in the Board's Booklet of Information. If, after becoming familiar with the requirements, a candidate needs advice about his training, or believes he has completed the requirements, he should submit a brief chronological outline of his training, including precise dates, using the Evaluation Form which will be furnished on request.

Application for Examination forms are not forwarded until candidates are within several months of completing their training requirements and appear to have met all other requirements of the Board.

Applications should be returned by August 1 if consideration is desired for examination in Part 1 in December of the same year. Those desiring such consideration are urged to apply several months before completing their training requirements to enable the Board's office to process as many applications as possible before the August 1 registration deadline.

Candidates completing their training requirements after September 30 must await consideration for admission to the December Part 1 examination one year later.

The Board's acceptance of candidates for examination is based not only upon an evaluation of their training, but also upon information available to the Board concerning their professional ability as surgeons and their ethical standing.

Candidates are notified of their eligibility for the Part 1 examination when their applications have been approved, and subsequently are sent a list of examination centers from which to choose. Candidates are not eligible for the Part 2 examination until they have made a passing grade in Part 1.

THE FOUNDERS GROUP

The Founders Group, to which were admitted those who had already amply demonstrated their fitness as trained specialists in surgery, was closed in January, 1940.

EXAMINATION

The qualifying examination is divided into Part 1 (written) and Part 2 (oral). In both of these a knowledge of the practical application of the sciences fundamental to surgery is required.

PART 1

The examination is given simultaneously in as many centers throughout the United States as the Board may determine suitable for the purpose and sometimes by special arrangement in certain centers abroad. It is held once annually on the first Wednesday of December.

The Part 1 examination is of the objective, multiple-choice type, and is administered during a half-day session. This examination is designed to cover general surgical problems including the application of the sciences basic to surgery. Questions are of various types, and are based upon the analysis of case histories, cause and effect relationships, and other pertinent situations. The examinations are composed by members of the Board with the technical assistance of the Educational Testing Service.

PART 2

Examinations usually are held in ten different centers in the United States each year from September to June inclusive. These examinations are conducted by members of the Board and selected diplomates acting as guest examiners.

The Part 2 examination is oral and practical and requires the candidate's presence for one day. Candidates are examined in Clinical Surgery and in Basic Sciences, including diagnosis, management of patients, and the application of anatomy, pathology, physiology, biochemistry, and bacteriology to surgical problems. In pathology, emphasis is placed on an understanding of disease processes and their clinical implications. The identification of gross and microscopic lesions and the interpretation of roentgenograms also may be included.

RE-EXAMINATION

PART 1. Candidates who fail Part 1 are required to wait one year before they can be eligible for reexamination.

PART 2. Candidates who fail Part 2 in its entirety or in Clinical Surgery are required to wait one year before they can be eligible for re-examination. Those who fail only in Basic Sciences are required to wait six months.

Should a candidate fail a re-examination in Part 1, or a re-examination in Part 2 in its entirety or in Clinical Surgery, the Examination Committee will consider an appeal for the privilege of further examination after the lapse of two years, provided he has demonstrated initiative in furthering his professional development. The Board, however, on the basis of its judgment, may deny a candidate the privilege of further examination.

Candidates who fail a re-examination in Basic Sciences are required to wait one year before they can be eligible for further examination.

FEES

The fee for examination is $175 payable as follows: $25 for registration, $75 for Part 1 and $75 for part 2.

The fee for re-examination in Part 1 is $75. Fees for re-examination in Part 2 are as follows: $75 for re-examination in Part 2 in its entirety, and $50 for re-examination in Clinical Surgery only, or in Basic Sciences only.

The Board is a non-profit organization. All fees will be used, after a reasonable amount is set aside for necessary expenses, to aid in improving existing opportunities for the training of surgeons. The members of the Board, except the Secretary-Treasurer, serve without remuneration.

CERTIFICATION IN THORACIC SURGERY

Diplomates of the American Board of Surgery wishing to become certified in thoracic surgery are advised to communicate with the Secretary of the Board of Thoracic Surgery, Doctor William M. Tuttle, 1151 Taylor Ave., Detroit 2, Mich. This Board is an affiliate of the American Board of Surgery.

BOARD OF THORACIC SURGERY

(An affiliate of the American Board of Surgery)

John C. Jones, Chairman, Los Angeles
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Herbert C. Maier, New York City
Robert R. Shaw, Dallas, Texas
John W. Strieder, Boston
Wm. M. Tuttle, Secretary-Treasurer, 1151 Taylor Ave., Detroit 2, Mich.

REQUIREMENTS FOR EXAMINATION

1. Certification by the American Board of Surgery.
2. Two years training in thoracic surgery approved by the Board of Thoracic Surgery, or meritorious contributions to thoracic surgery. One of these two years may be spent during the four years of training in surgery required by the American Board of Surgery.
3. Written and oral examination.

Definition of what is considered acceptable training in Thoracic Surgery.—To qualify for the examination in thoracic surgery, the candidate shall have had two years of training in an active, well-integrated thoracic surgical clinic or clinics, or the equivalent amount of thoracic surgical training, on a mixed service consisting of thoracic and non-thoracic surgical cases. Adequate training in both the tuberculous and non-tuberculous aspects of thoracic surgery is expected. In order to obtain this objective, combined residencies between institutions of different types may be advantageous. It is also required that the candidate be familiar with the basic sciences as related to thoracic surgery. Recently there have been a considerable number of applications in which the training has consisted largely of thoracic-cardiovascular surgery. It was decided by the Board some time ago that only six months' credit would be given for training in thoracic-cardiovascular surgery regardless of the time actually spent in this aspect of thoracic surgery. Under exceptional circumstances certain surgeons may, by virtue of recognized proficiency in the surgical treatment of thoracic diseases, qualify for the examination at the discretion of the Board.

APPLICATIONS

Prospective candidates desiring to apply for examination should consider whether they are able to meet the minimum requirements of the Board. They should then submit a letter to the secretary's office, outlining briefly their training and experience in thoracic surgery and ask for an application form. An application form will not be sent unless evidence is submitted in the letter indicating that the prospective applicant appears to meet the minimum requirements.

EXAMINATIONS

The qualifying examinations are divided into two parts. Part 1 is written, and part 2 is an oral examination in clinical surgery, x-ray interpretation, and pathology.

Part 1.—This examination will be given simultaneously at least once a year in as many centers throughout the country as the Board may determine suitable for this purpose.

Part 2.—In order to be eligible for part 2 a candidate must have successfully completed part 1. Examinations in part 2 are conducted in certain centers of the country selected by the Board.

Candidates examined by the American Board of Surgery in part 1 (written examination) on or after October 26, 1955, who are certified by the American Board of Surgery, will be required to take only the oral examination given by the Board of Thoracic Surgery.

Candidates examined by the American Board of Surgery in part 1 prior to October 26, 1955, will be required to take part 1 (written examination) of the Board of Thoracic Surgery before taking its oral examination.

REEXAMINATIONS

Those individuals who fail part 1 or part 2 will be required to wait one year before they can retake the part which they failed. Those who fail twice will be required to wait for a period of two years. Candidates who are unsuccessful at three attempts will be required to wait three years before requesting reconsideration. The Board may at its discretion deny the candidate the privilege of reexamination.

Candidates declared eligible but who fail to exercise the examination privilege within three years of the date of filing the application will be required to file a new and current application and pay a new examination fee. Also a candidate who has failed in an examination (part 1 or part 2) and who does not apply for reexamination within three years shall be required to make a new application and pay a new examination fee.

FEES

For the special examination in thoracic surgery and the issuing of a certificate the fee will be $100. Fifteen dollars of this fee is to accompany the application and will be considered as a registration fee. It is nonreturnable to the applicant in case he is disapproved for examination. The fee for reexamination will be $50.

AMERICAN BOARD OF UROLOGY

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REQUIREMENTS

A. Application for certification must be made on a special form provided by the Secretary. This shall be returned to him accompanied by other required data and credentials and by $75 of the examination fee. See Article VII, FEE.

B. The applicant must have graduated from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association and must have completed an internship of not less than one year in a hospital approved by this Council.

Requirements of graduates of foreign Medical Schools shall conform to and be similar to the requirements as demanded of the applicants for the accepted medical schools in the United States and Canada. Such applications will be considered by the full Board on individual merits.

C. The applicant must establish in a manner satisfactory to this Board that he is a physician duly licensed by law to practice medicine and that he is of high ethical and professional standing.

D. The applicant must establish that he has received special graduate training as follows:

1. An approved internship of at least one year.

2. *One year in the basic sciences or clinical studies basic* to Urology; or one year residency in general surgery or internal medicine, on an approved service.

3. An approved graduated three-year residency in Urology, leading to competency in all its phases.

Any formally integrated service may permit some variation on the one-year basic science, general surgery and internal medicine requirement, provided it is completed prior to the senior year.

E. Applicant must have an additional period of not less than two years in the practice of Urology in the city of his office or place of practice.

F. The applicant must assure the Board that he is engaged in the full time practice of Urology.

FEE

The examination fee is $175.00. (This fee will be increased when and if the expense of the examinations and other activities of the Board demand.) Seventy-five dollars must accompany the application. One hundred dollars must be paid when the application has been processed. Neither fee is returnable.

Applications for certification shall be examined by the Credentials Committee and reviewed by the Board. When additional data are required to complete the application, these will be requested by the Secretary.

If a candidate fails, he will be permitted a second examination after one year or within three years, without additional fee, but he must give sixty days' notice of his intention to appear for re-examination. A NEW group of case reports will be required, which do not duplicate previous submissions made to the Board. When an applicant has failed twice he may file a new application after two years and shall pay a second full fee.

A candidate who has been failed twice in any part of the examinations may be required to have additional training in accordance with recommendations from the full Board before he may be permitted further examination.

REQUIREMENTS FOR CERTIFICATION

The requirements for certification include: evidences of hospital practice including the presentation of reports of twenty-five representative (not necessarily consecutive) major urological cases from practice, which must contain all items essential for diagnosis, therapy, prognosis, results of treatment, etc.; a written examination; pathology and oral-clinical examinations.

A. Evidences of Hospital Practice and Case Reports.

An index, in consecutive order, of all major and minor urological surgery (including endoscopy) done during the last two years of practice must be presented. This index must be verified by the various hospital administrators.

The candidate must present twenty-five records of major urological cases completed since the candidate's residency training with hospital, names (or initials) and record numbers, in which the candidate has had complete charge, responsibility and activity in all phases of the patient's care. These reports must be typewritten on 8½" by 11" paper and in duplicate, but need not be on any special form. PLEASE FILE THE DUPLICATE IN YOUR OWN OFFICE. The second copy will be called for when and if it is needed.

Complete index lists must accompany the reports. If they are obtained from more than one hospital, a separate index list of each group should be provided. These lists must state the operator's name at the head of each page, the name (or initials) of the patient, the hospital number and the name and date of operation. Statements from the administrators of the hospitals attesting that the candidate was the operator must be included.

The candidate must PERSONALLY prepare the case reports, remembering that these are documentary evidence of his ability and that the material in them and the manner of presentation are important evidence of his competence as an Urologist.

The case reports must be received on or before September 1.

The case reports must be prepared as follows. Those not conforming to this outline will be returned for correction.

1. Heading: including identification of patient, hospital number and name or initial, age, marital status, sex, occupation, diagnosis, dates of hospitalization, date and name of operation, and outcome.

2. Complete history, including chief complaint, present and past history, family history, review of symptoms, etc.

3. Complete physical examination, including temperature, pulse, respiration and blood pressure, upon admission.

4. Initial laboratory and x-ray examinations must be recorded in detail.

5. Admitting diagnosis, based on above, with reasons for making this diagnosis.

6. Indications for further management and description of same in chronologic order, together with finding and outcome, as they occurred. This should include detailed description of all subsequent laboratory and x-ray findings, final pre-operative diagnosis and reasons for same.

7. Major and minor surgical procedures shall be described in detail. A detailed description of all other treatment and findings such as administration of drugs and fluids, morbidity, complications, consultations, use of special drainage, etc., shall be recorded.

8. A detailed description of the post-operative course, including complications and outcome shall be given. If autopsy is done this should be reported.

9. An adequate follow-up of patient's course after dismissal from the hospital.

10. Final summary of the case.

This must include the candidate's interpretation of the record in terms of pathology; the basis for diagnosis; the facts that determined the treatment prescribed, whether surgical or otherwise; the course of treatment to be pursued following discharge from the hospital or clinic; and a critical discussion of the knowledge gained from the management of the case.

11. The entire record should be compiled as chronologically as possible and *must* contain dates of all data.

12. The candidate will be required to include a statement that he has personally prepared and edited the case reports.

B. Written Examination: The written examination is designed to test the candidate's preparation in and his knowledge of the whole field of Urology, including the subjects: clinical Urology, pathology, anatomy, physiology, embryology, bacteriology, physiological chemistry, and endocrinology. These may be held on certain dates simultaneously in different parts of the country at places convenient for candidates.

C. Pathology: The examinations in pathology will consist of the identification of gross specimens and of sections of tissue observed through the microscope. It will be held at the time of the oral examination.

D. Oral-clinical examination: This will consist of discussion of urological problems. The subjects forming the basis of this examination are urography; diseases of the genital organs, including the prostate and each portion of the urinary tract and the adrenals. It will ascertain the candidate's familiarity with recent literature, the breadth of his clinical experience and his general qualifications for the practice of Urology.

The professional adaptability of each candidate will be investigated in an attempt to determine his ethical conduct and his attitude toward his patients and fellow practitioners.

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THE CONFERENCE COMMITTEE ON GRADUATE TRAINING IN SURGERY

GUEST EDITORIAL

Warren H. Cole, M.D.

THE Conference Committee on Graduate Training in Surgery sponsored by the American Board of Surgery, the American College of Surgeons, and the American Medical Association was organized to evaluate residency programs in surgery. There is apparently confusion in the minds of some physicians as to the activities and accomplishments of this committee.

Records indicate, as shown in the table below, that in 1951, the first year of the Committee's activities, 224 four-year programs and 258 three-year programs were approved, with a total number of 3,877 residency positions available. In 1958 records indicate that 329 four-year programs and 198 three-year programs were approved with a total number of 5,316 residency positions available. Lest it appear from these figures that approval of three-year programs is being curtailed, we wish to emphasize, as will be noted later, that in 1958 alone 19 three-year programs were elevated to a four-year program.

The 5,316 residency positions available in 1958 compared to the 3,877 available in 1951 represent an increase of 38.7%, which is considerably greater than the increase in number of medical school graduates during this seven-year period; for example, there were 6,135 graduates in 1951 compared to 6,861 in 1958 or an increase of 11.6%. The increase per year in the total number of positions made available is surprisingly similar from one year to another; for the three biennial periods shown in the table it was 449, 331, and 625 respectively. In addition to the 5,316 residency positions made available in 1958, there were 19 additional type IV hospitals offering a one-year residency in pediatric or oncologic surgery. There was an additional group of 126 hospitals (317 positions) approved by the American Medical Association for one to two years.

In 1958 records indicate that 20% of all residencies were filled with foreign graduates. We do not have the exact number of foreign graduates in our general surgical residencies, but we have no reason to believe it would be much different than the figure for all specialties. Also, records indicate that 8% of the general surgical residencies were unfilled. We believe these figures offer good evidence to the effect that there would be no logic in increasing the number of programs any more rapidly than is being done, since there would be no qualified candidates to fill them.

Records also show that in 1958 seven residency programs were disapproved, but only after they had received warning of certain deficiencies which were not corrected in due time. However, during this period 26 programs were given original approval or reapproval. The few in the reapproval group had been disapproved at some previous time but were encouraged to improve their programs and reapply; this they did successfully. These data are presented to show that the committee strives to improve programs and not disapprove them. If all programs were approved with no consideration as to quality it would be agreed by all that a program of evaluation and accreditation would be meaningless and worthless.

Residencies Approved in General Surgery by the Conference Committee

	1951	1953	1955	1957	1958
No. of 4-yr. programs	224	239	263	307	329
No. of 3-yr. programs	258	245	225	202	198
Total no. of programs	482	484	488	509	527
Positions available in 4-yr. programs	2,294	2,759	3,232	4,063	4,222
Positions available in 3-yr. programs	1,583	1,567	1,425	1,219	1,094
Total positions available	3,877	4,326	4,657	5,282	5,316

The Committee appreciates that the majority of four-year programs are better teaching programs than most three-year programs, but is convinced that the three-year programs can offer good training and has no intention of discontinuing them. Some of the hospitals with three-year programs do not have adequate staff or clinical material to set up a four-year program. Furthermore, in many instances the chief of surgery is so frequently rotated that continuity of the teaching program is difficult to obtain. The Committee makes all possible effort to promote a three-year program to a four-year program as rapidly as possible; this is corroborated by the fact that, in 1958, 19 programs previously approved for three years were raised to a four-year residency. Records also reveal that more than two-thirds of the approved programs have no medical school attachment, and many of the one-third which do have an affiliation do so only at an undergraduate level, meaning their administration and professional staff are independent of a medical school. This should also serve to indicate that the Committee looks favorably on the "smaller" hospitals of the community type and appreciates the fact that they are serving an excellent purpose in the teaching of surgical residents.

The Conference Committee has written a Guide Book, which has been approved by its three sponsoring agencies, and distributes it on request. This booklet was not designed as a book of rules, but was formulated to offer suggestions to those concerned with residency training. The Conference Committee has no official connection with the Joint Commission on Accreditation of Hospitals, but before applying for approval of their residency programs hospitals should first meet the requirements of the Joint Commission.

ANNUAL REPORT AND DIRECTORY OF APPROVED INTERNSHIPS AND RESIDENCIES

The 33rd Annual Report on Internships and Residencies published in this issue of THE JOURNAL follows the format for previous years, but provides certain additional information not previously published pertaining to the support of residency training programs. Additional information is supplied on the distribution of foreign medical graduates in residency programs. A chart and narrative analysis of the growth of both internship and residency programs since World War II has been prepared to indicate the relative role played by the entry of the federal government in the field of graduate training in 1946 and also the increasing proportion of both internship and residency positions filled by foreign medical graduates as a result of the Exchange-Visitor program authorized by the United States Information and Educational Exchange Act of 1948.

There are indications that perhaps there may be a leveling-off in some phases of these programs. The increase in available internships and residencies was less than last year. There was no significant increase in intern stipends for the first time in five years. There may be a decrease in the number of foreign medical graduates available in the immediate future.

As the Council on Medical Education and Hospitals improves its techniques of securing and analyzing data concerning training programs, these data will be presented for the guidance of training program directors and medical administrators concerned with program trends and planning for the future. The format of the Directory of Approved Internships and Residencies will be improved whenever possible.

Figure 2 of the Annual Report on post-World War II growth of programs indicates at a glance the progressively heavy responsibilities carried by the staff of the Council, its field representatives who are responsible for program surveys, and the review committees which evaluate the survey reports and determine the future status and appropriate methods of listing an ever-increasing number of training programs.

THE FOREIGN MEDICAL GRADUATE

At the recently concluded Second World Conference on Medical Education, some distinguished foreign medical educators expressed dissatisfaction with the training their medical graduates were receiving in the United States as interns and residents. On the other hand, there is widespread dissatisfaction in the United States at the performance of many foreign physicians now holding appointments in approved graduate training programs in American hospitals.

Two recent actions will unquestionably bring about improvement. A foreign medical graduate who comes to the United States on the Exchange-Visitor program can no longer remain in this country as a "chronic student" in the hopes of remaining here permanently, but must return to his homeland after five years of American study. The target date for the Educational Council for Foreign Medical Graduates certification for all foreign graduates serving approved internships or residencies in this country is July 1, 1960. The certification process will assure hospital staffs and administrators that the foreign medical graduates so certified have had acceptable prior training, have competence with the English language, and have satisfactory professional qualifications. Foreign graduates so certified should unquestionably receive greater attention from the directors of training programs and should make far greater progress in assumption of responsibility for patient care and comprehension of the capabilities the American medical profession expects of all physicians trained in the American system. The foreign graduates thus trained up to a five-year maximum would accordingly return to their homelands with the realization that they have received the best we can offer instead of with the feeling that they have been abused for purposes of service, as has been undoubtedly true in some instances in the past.

There is no question but that the five-year cut-off date to be enforced by the State Department and the certification process of the Educational Council for Foreign Medical Graduates will reduce the pool of foreign medical graduates available for service as interns or residents in the future. This reduction, however, will affect the poorly qualified graduate student and the one who will accept any position in order to remain in this country contrary to the intent of the Congress.

Every administrator and director of an approved internship or residency program should be thoroughly familiar with the sentence contained in the statement on the Present and Future Status of Foreign Medical School Credentials in the United States. This statement represents the official policy of the American Medical Association, the American Hospital Association, the Association of American Medical Colleges, and the Federation of State Medical Boards, and was published in The Journal July 19, 1958, pages 1526 to 1528. The sentence is as follows:

"Regardless of the date of appointment, it is expected that all graduates of foreign medical schools serving as interns or residents in U. S. hospitals as of July 1, 1960 will have been certified by ECFMG."

HOSPITAL DIRECTOR OF MEDICAL EDUCATION

During recent years, there has been a growing realization on the part of hospital administrators as well as hospital medical staffs that the proper coordination of internships and residency training programs, particularly in community hospitals not affiliated with medical schools, could best be served by the employment of a highly qualified physician paid specifically for the performance of this task. The most common term for such an individual is director of medical education, or oftentimes director of medical education and research. The most successful of these positions are full time in the hospital, and those holding such positions are usually clinicians, most often internists.

While the Council has never stated that the maintenance of fully approved intern and resident training programs depended on the creation of such positions in the hospitals concerned, nevertheless it recognizes the merit of such positions and encourages their creation where desired.

A young organization in this field is rapidly attaining a position of influence. The name of the organization is the Association of Hospital Directors of Medical Education, and it is listed in the Guide Issue of *Hospitals*. The guide is further described in a separate editorial in this issue of The Journal. This organization holds its annual meeting in Chicago just prior to the Congress on Medical Education and Licensure in February of each year. The purposes stated in its Constitution and Bylaws are (*a*) to nurture the growth and development of sound programs of medical education in community hospitals; (*b*) to accomplish this end through a free exchange of ideas on common problems among community hospital education program directors; and (*c*) to convince by persuasion and example the medical staffs of community hospitals, regional medical societies, hospital administrators, and hospital administration groups of the value and necessity of formally organized and directed education programs to achieve and maintain the highest standards of community hospital medical care.

While the Council does not at this time provide any literature describing the functions and responsibilities of a hospital director of medical education, such a document will undoubtedly be issued by the appropriate bodies in the future. In January, 1959, a two-day workshop conference was held between representatives of the Association of Hospital Directors of Medical Education and representatives of the Council on Professional Practice of the American Hospital Association, Council on Medical Education and Hospitals of the American Medical Association, and Executive Council of the Association of American Medical Colleges. A transcript of the proceedings of this conference has been published in pamphlet form by the American Hospital Association. The availability of this pamphlet will be announced by the American Hospital Association in the near future.

HOSPITAL FACTS FOR PHYSICIANS

The Council on Medical Education and Hospitals of the American Medical Association and the American Hospital Association cooperate in joint mailing of their annual questionnaires on hospital programs. Most physicians are probably unaware that the statistics gathered in this manner by the American Hospital Association are published in August in the Guide Issue of *Hospitals*. Repeated here are highlights from the tables in the report on Hospital Statistics for 1958:

"The 6,786 hospitals in the continental United States reported a total of 1,572,036 beds. The total number of admissions to these hospitals was 23,697,157. Since some individuals may have been admitted more than once, the total number of persons receiving hospital care during the year is unknown. The estimated average number of patients in all hospitals each day was 1,322,938, an occupancy of 84.2 per cent. A total of 3,742,028 births was recorded by 4,992 of the hospitals. Hospitals with less than 50 beds comprised 36 per cent of all hospitals, and reported 11 per cent of all admissions.

"In the 5,290 nonfederal hospitals providing predominantly short-term care, there were 609,732 beds and 21,683,528 admissions during 1958. On the average, 451,144 patients were in these hospitals each day; the average occupancy was 74.0 per cent and the average patient stay was 7.6 days.

"For all listed hospitals total assets were in excess of $15 billion in 1958. Total expenses exceeded $7 billion, of which $4.7 billion, or 65 per cent, were for payroll.

"Total expense per patient day averaged $14.74 for all hospitals, with the voluntary short-term hospitals at the high end of the range with $28.27 and nonfederal psychiatric hospitals at the low end of the range with $4.40.

"Of all hospitals with 25 beds or more, 58 per cent were accredited. In the nonfederal short-term hospitals of this size, 61 per cent were accredited; while in the voluntary hospitals of the short-term group 73 per cent were accredited, with 100 per cent accreditation in the hospitals with 300 beds or more. Over 78 per cent of all listed hospitals are members of the American Hospital Association.

"There were 1,464,829 full-time workers in all listed hospitals. (This figure includes full-time equivalents for part-time employees.) For all listed hospitals, there were on the average 111 personnel per 100 patients, representing a range from 224 personnel per 100 patients in voluntary short-term general hospitals to 34 personnel per 100 patients in nonfederal psychiatric hospitals.

"In 1958 over 236,000 graduate professional nurses were employed full-time in hospitals; in addition, nearly 65,000 were employed part-time. Other nursing personnel totaled nearly 417,000 full-time and slightly over 34,000 part-time.

"Each of the following facilities and services was reported by more than 90 per cent of the short-term nonfederal hospitals reporting: Basal Metabolism Apparatus, Clinical Laboratory, Electrocardiograph, Emergency Room, Medical Records, Operating Room, and Diagnostic X-Ray. A newer type of facility, the Intensive Care Unit, was reported by 9 per cent of these hospitals."

EMERGENCY SERVICE BY AIR

Providing medical care for the sick and injured in times of emergency is a dual responsibility for the doctor. While such action is implicit in his role as physician, he also has the personal responsibility—as has each member of the human community—to succor those of his fellows who may be in distress.

The medical challenge presented by an emergency is one that physicians have provided for in many ways. Individually, each has accepted calls from those in need—and medical societies, hospitals, and public safety officials have long maintained lists of doctors willing to reply to emergency calls. In rural areas, physicians have installed short-wave radios in their automobiles so that they can be summoned by peace officers if they are needed. And many county and state societies also boast disaster plans for mobilizing medical help for victims of catastrophe.

A Medicine at Work report on page 633 outlining the activities of doctors aloft describes yet another form of emergency service that physicians hope to offer to the American people. The plan of enlisting more than 1,500 physicians, each capable of flying his own plane to the scene of a disaster, is both imaginative and broad in scope. These highly mobile units in every state offer a potential medical force that can be used selectively for emergencies of any magnitude in almost any location.

No one has suggested to these doctors that the formation of such a service is a duty. It is being undertaken voluntarily in the belief that it will prove useful. Under these conditions, it typifies public service at its best.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

POLICY ON APPROVAL OF INTERNSHIP PROGRAMS

This is a statement of the policy of the Council on Medical Education and Hospitals regarding approval of internship programs, and includes a description of the evaluation process.

The basic requirements for approval of a satisfactory internship training program are contained in the current revision of "Essentials of an Approved Internship." This pamphlet is available at no charge on request to the Council. A basic requirement is that a hospital should be accredited by the Joint Commission on Accreditation of Hospitals before applying for an approved program.

If a hospital staff feels it can organize an acceptable program in accordance with "Essentials," an application blank will be forwarded on request to the Council, and this blank must be returned for preliminary review. If preliminary review of the application blank indicates that the hospital may satisfy the minimum requirements for approval, then an entry is made in the master record system at headquarters indicating that the application has been accepted and initiating the process of scheduling the hospital for a survey visit by one of the field representatives of the Council staff.

Approximately one month before the date set for the survey visit, the hospital is notified of the specific date and hour of arrival of the field representative and any further instructions are included in that letter.

The report of the survey of the field representative along with all supporting data furnished by the hospital is then returned to the Council offices where it is again reviewed and then forwarded to one or more representatives of the Internship Review Committee. This preliminary review is then returned to the Council headquarters with any additional notes or suggestions or requests for additional data.

If the preliminary review by the committee member indicates that there are deficiencies in the program as presented which might lead to adverse action by the full committee and by the Council, a letter is written to the hospital enumerating the deficiencies and inviting clarification or the submission of additional data to strengthen the application.

The Internship Review Committee meets at least twice yearly and makes recommendations on each program to the Council. Final action is taken by the Council and the hospital is notified of this action from the Council headquarters.

The Council may approve, approve provisionally, disapprove, defer action, or place a program on probation.

When a training program is not yet in full operation but shows promise of meeting all educational requirements, the program may be granted provisional approval, subject to relatively early review.

In the event of any action other than approval, specific reasons for such action are stated in the letter of notification and specific instructions are given as to the deadline dates on which additional action by the hospital is necessary in order to preserve the approved status of the program.

When a training program does not meet the requirements for continuation of approval, but has the potential for doing so, that program may be placed on probation until requirements are met. A period of 12 to 18 months is generally allowed for correction of deficiencies. If correction has not been accomplished by the specified date, appropriate action will be taken.

An approved program may be dropped for a variety of reasons from the Directory of Approved Internships published annually in the Internship and Residency number of The Journal. The hospital may itself request discontinuation of the program. By direction of the House of Delegates, the Council applies the "one-fourth" rule which states that any program which has failed to obtain at least one-fourth of its established quota of interns for two successive years may be disapproved. Such programs are accordingly dropped from the listing in the Directory. Some programs are dropped from the listing when those responsible fail to reply to requests for information and after ample warning of deficiencies. All such notifications from the Council are sent both to the hospital administrator and to the chairman of the training committee. Failure to reply is taken by the Council as an indication that the hospital authorities choose to allow the program to lapse.

The appeal procedure from an adverse action of the Council is always clearly stated in the confidential letter of notification. The letter may request clarification of areas on which there may be misunderstanding, or it may specify the deficiencies in the program which must be corrected if approval is to be maintained. It is the established policy of the Council that sufficient time be allowed for correction of deficiencies or clarification of misunderstandings so that no program need be dropped from the listing of approved programs except by default of hospital personnel. The appeal procedure may take the form of simple exchange of correspondence, but the Council staff is always available for personal consultation at the request of those concerned.

There are rarely occasions when, because of deadline dates for publication of the Directory of Approved Internships and Residencies, a previously disapproved program secured reapproval too late for inclusion. Such newly approved but unlisted programs are listed in the supplementary list published by the NIMP each year in December and mailed to all senior medical students. The Council plans on issuing a supplementary list early in January to serve the dual purpose of assisting such hospitals in their recruitment efforts and also to reassure current incumbents of such internships that they should be credited with having served in approved programs.

RESIDENCY TRAINING PROGRAMS IN RADIOLOGY

The Residency Review Committee for Radiology, on recommendation of the American Board of Radiology and the Council on Medical Education and Hospitals of the American Medical Association, is now approving residency training programs for three years in radiology, diagnostic roentgenology, or therapeutic radiology. Departments wishing to be approved in one or more of these categories will be examined specifically with these training programs in view. Further information as to application procedure, content of application forms, and method of listing in the Directory of Approved Internships and Residencies will be published as developed by the Residency Review Committee.

MEDICAL NEWS

CALIFORNIA

Symposium on Aviation Medicine.—Medical problems in manned space flight, commercial jet operations, and military aviation will be analyzed by experts at an aviation medicine symposium meeting Oct. 28-30 at the Miramar Hotel, Santa Monica. Physicians, engineers, and scientists at the University of California Extension conference will hear reports on the selection of space astronauts, problems of space radiation, and physical demands on commercial pilots, according to chairman Dr. Bruce V. Leamer, Los Angeles. Speakers will include General Otis O. Benson, commandant of the Air Force School of Aviation Medicine; Mr. Robert Gilruth, director of the Space Task Group, National Aeronautics and Space Administration; Mr. John E. Smith, research chief of the Federal Aviation Agency; and the medical directors of major airlines and aircraft companies. Scott Crossfield, chief test pilot for North American Aviation, will address the Oct. 28 dinner meeting. Information and registration forms may be obtained from Department of Continuing Education in Medicine, UCLA Medical Center, Los Angeles 24.

IDAHO

Dr. Rossomando to Tour Europe.—Dr. Alfred H. Rossomando, of Nampa, will be among the 60 Americans to fly from New York on Oct. 16 for a 10-day overseas study tour of Radio Free Europe's broadcasting facilities. Dr. Rossomando is the Idaho state chairman for the Crusade for Freedom, which sponsors the trip. A private nonprofit organization, Crusade for Freedom supports RFE's anti-communist broadcasts to the Iron Curtain countries of Poland, Czechoslovakia, Hungary, Romania, and Bulgaria. No crusade contributions are used to finance the trip. Attending urologist of Mercy and Samaritan Community Hospitals in Nampa, Dr. Rossomando is director of the Canyon County American Cancer Society, the Nampa American Red Cross, and the Nampa United Fund. Members of the group will be briefed on operations and will inspect RFE's installations in Munich, Germany. One day will be spent at the West German-Czechoslovak border. Side trips will be made to SHAPE headquarters and to Lisbon, Portugal, for a day's inspection of RFE's shortwave transmitter plant.

LOUISIANA

Meeting on General Practice.—The Louisiana Academy of General Practice will hold its 13th annual scientific assembly on Oct. 20-22 at the Capitol House in Baton Rouge, Dr. Francis I. Nicolle, of New Orleans, secretary, announced. The night preceding the opening of the assembly, academy members and guests will be entertained by Dr. and Mrs. Esmond A. Fatter, of New Orleans, president of the academy and president of the auxiliary, respectively. They will be co-hosts with Dr. Joseph W. Crookshank, of Lake Charles, president-elect, and Mrs. Crookshank. The Congress of Delegates of the academy will be in session on the morning of Oct. 20. The scientific portion of the program has been accepted for 11 hours category I credit by the American Academy of General Practice. Speakers will include Dr. Nicholas J. Chetta, New Orleans; Dr. Carl A. Nau, Galveston, Texas; Dr. Vincent P. Collins, Houston, Texas; Dr. Joseph A. Sabatier Jr., Baton Rouge; Dr. Robert I. Wise, Philadelphia; Dr. Philip Thorek, Chicago; and Dr. Irving Redler, New Orleans. Two medical films will round out the scientific program. On Oct. 21, the Louisiana academy will hold its annual installation dinner. Sixty Pharmaceutical and allied companies will present technical exhibits during the meeting.

MASSACHUSETTS

Medical History Meeting.—The next meeting of the Benjamin Waterhouse Medical History Society will be held at the Massachusetts Memorial Hospital Monday, Oct. 19. Speaker at the evening session will be Dr. Harry S. Goldsmith, Third (Boston University) Surgical Service, Boston City Hospital, who will present "Facinating Events in Human Dissection." All interested persons are invited to attend the medical history session. For information, write Dr. John J. Byrne, 818 Harrison Ave., Boston 18, Secretary.

NEW YORK

Report on Poliomyelitis.—The New York State Health Department announced Sept. 11 that 36 new cases of poliomyelitis, 16 of them paralytic, were reported in Upstate New York during the week ending Sept. 10. In the corresponding period in 1958, 13 cases of poliomyelitis, 11 paralytic, were reported. From the first of the year through Sept. 10, a total of 156 cases of poliomyelitis has been reported, compared with 85 last year and an average of 832 for the years 1951 through 1953. Ninety-

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Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

eight of this year's cases have been paralytic, compared with 55 for the same period last year, and an average of 448 for the years 1951 through 1953. Six of last week's 16 paralytic cases occurred in persons having three injections of the Salk vaccine. So far this year 26 of the 98 paralytic cases have occurred in persons having at least three injections of the Salk vaccine.

New York City

Dr. Cipollaro Honored.—Dr. Anthony C. Cipollaro, director, department of dermatology and syphilology, New York Medical School, will receive the annual Gold Medal Award from the Italian-American Charitable Society, Inc., of Boston, given each year to a "distinguished American of Italian ancestry who has made notable contributions to the progress, defense and welfare of the Nation." The award will be made Oct. 11. This is the first year since the inception of these awards in 1945 that a medical man has been honored by the society. Some of the previous recipients of this award have been the late Enrico Fermi, scientist; Gen. Ralph A. Palladine, chief of the U. S. Army Reserves; Mr. Lou Perini, industrialist and philanthropist; Judge Michael A. Musmanno, of the Pennsylvania Supreme Court; and Rt. Rev. Luigi G. Ligutti, of Des Moines, Iowa.

NORTH CAROLINA

Program in Cancer Chemotherapy.—A training program designed to produce research specialists in the chemical treatment of cancer has been established at the Duke University Medical Center, Durham. Financial support will come from U. S. Public Health Service funds scheduled to total $277,540 during the next five years. Dr. Ralph W. Rundles, head of the Duke Medical Center's hematology laboratory, is director of the program. The Duke program will train physicians to study new anticancer compounds in comparison with established agents. Specialists prepared for this work will have training in internal medicine, two years' study in chemotherapy and hematology, and additional work in biochemistry. The program will include training activities at the medical undergraduate, postgraduate, and hospital junior staff levels. From three to six persons will enter the program each year, beginning in January, 1960. Other activities of the program will include chemotherapy lectures, seminars, and postgraduate courses for practicing internists and hematologists.

PENNSYLVANIA

Dr. Stout to Conduct Tumor Seminar.—On Oct. 23 at the fall meeting of the Pennsylvania Association of Clinical Pathologists in Pittsburgh, Dr. Arthur P. Stout, emeritus professor of surgical pathology, at Columbia University College of Physicians and Surgeons, New York City, will conduct a tumor seminar. A limited number of slide sets are available. Requests for slides, accompanied by a check for $10 made payable to Pennsylvania Association of Clinical Pathologists, should be sent to Dr. W. Glenn Reed, West Penn Hospital, Pittsburgh 24.

Personal.—Dr. Richard J. Cross, assistant dean, Columbia University College of Physicians and Surgeons, New York City, was appointed associate dean of the University of Pittsburgh School of Medicine. He also became assistant professor in the department of medicine. Both appointments were effective on July 1.——Dr. Fred C. Kluth, Austin, Texas, director of the training division, Texas State Health Department, on Sept. 19 began serving as medical director of the Southeast District of the Allegheny County (Pittsburgh) Health Department. Dr. Kluth is a fellow of the American Public Health Association.

Annual State Session in Pittsburgh.—The 109th annual session of the Medical Society of the State of Pennsylvania will be held Oct. 18-23 at Penn-Sheraton Hotel, Pittsburgh. Panel discussions and moderators to be presented at the general sessions are as follows:

Present-Day Management of Diabetes, Dr. Garfield G. Duncan, Philadelphia.
Iatrogenic Aspects of Urinary Tract Infection, Dr. Theodore R. Fetter, Philadelphia.
Reversible Hypertensive Disease, Dr. William A. Jeffers, Philadelphia.
Rehabilitation of the Patient Disabled with Cerebrovascular Disease, Dr. William Dunbar, Philadelphia.

A symposium, "Disaster Medical Care," moderated by Dr. Leroy A. Gehris, Reading, will be presented at the Oct. 21 general practice session. Dr. C. Wilmer Wirts, president of the society, will preside at the general session the afternoon of Oct. 21. Speciality group meetings are arranged. The 12th annual state dinner will be held Oct. 20 ($7.00). Scientific and commercial exhibits are planned. For information, write Mr. Lester H. Perry, 230 State St., Harrisburg, Pa.

Philadelphia

Annual Alumni Dinner.—The annual medical alumni-faculty-senior class dinner of the University of Pennsylvania will be held in the University Museum Nov. 7, 6 p. m. Details and reservations can be secured through the dinner chairman, Dr. Alan Rubin, Department of Obstetrics and Gynecology, University Hospital, Philadelphia 4.

SOUTH DAKOTA

Pheasant Hunt and Medical Seminar.—The fifth annual Huron District Medical Society Pheasant Seminar will be held Oct. 17 and 18 in Saint John's

Nurses Home Auditorium, Huron. The South Dakota pheasant season opens at noon, Saturday, Oct. 17. Daily bag limit will be five birds. The scientific program is as follows:

Upper Gastrointestinal Hemorrhage, Dr. Benton A. Holm, Moline, Ill.
Hunting Accidents of the Eye, Dr. William R. J. Kilpatrick, Huron.
The Etiology and Prevention of Cardiac Arrest, Dr. Richard C. Wunschel, Moline, Ill.
Diagnostic Tests in Anemia, Dr. Robert F. Schilling, Madison, Wis.
Soft Tissue Injuries, Dr. Robert E. Van Demark, Sioux Falls.
Unilateral Exophthalmus, Dr. Leon J. Bullock, Huron.

Registration fee is $10. Arrangements for hunting or housing accommodations are not made by the society. The Huron Chamber of Commerce will help in this respect. For information, write Dr. F. D. Leigh, Secretary-Treasurer, Huron District Medical Society, Huron Clinic, Huron, S. D.

GENERAL

Neuropsychiatric Meeting in New Orleans.—The 35th annual convention of the Central Neuropsychiatric Association will be held Oct. 16-17 at the Hotel Roosevelt, New Orleans, under the presidency of Dr. Hamilton Ford, Galveston, Texas. Fifteen papers are scheduled for presentation on the program. The presidential address will be given by Dr. Ford at the executive session, the afternoon of Oct. 16. The annual banquet will be held at 7:30 p. m., Oct. 16. Registration fee is $20. A ladies' program is arranged.

Invite Applications for Blood Research.—The Hematology Research Foundation invites application for grants-in-aid for hematologic research for a period of one year. Applications must be submitted no later than Nov. 27 to Hematology Research Foundation, 64 W. Randolph St., Chicago 1. Awards will be announced by the medical advisory board. They will only consider grants up to $3,500, including overhead, and preference will be given to applications from the Chicago region, "unless it is an application of some unusual promise." The board will choose the applicants on the basis of the proposed research project. Nine copies of applications are requested (forms are available on request.)

Western Orthopedic Meeting.—On Oct. 18-22, the 23rd annual meeting of the Western Orthopedic Association will be held at the Brown Palace Hotel, Denver, under the presidency of Dr. William F. Stanek, Denver, who will present the presidential address the morning of Oct. 20. Over 30 papers are scheduled. A discussion on radioactive isotopes is planned for Oct. 21, with the following Denver participants (and specialties): Dr. Thad P. Sears (basic physics), Dr. Robert W. Lackey (medicine), and P. W. Jacoe, A. B. (industry). Exhibits are planned, and a ladies' program and golf tournament are arranged. For information, write the Western Orthopedic Association, 354 Twenty-First St., Oakland 12, Calif.

Eastern Psychiatric Meeting.—The fourth annual meeting of the Eastern Psychiatric Research Association, Inc., will be held Oct. 23-24 at the Waldorf-Astoria Hotel, New York City. A panel discussion, "Neuropsychiatric Aspects of Space Medicine," will be held the afternoon of Oct. 23, moderated by Dr. Robert L. Williams, Gainesville, Fla. Two symposiums are planned for Oct. 24: "Chemical and Behavioral Aspects of Psychoses," and "Genetics of Disordered Behavior," with Dr. William Malamud, New York City, and Drs. Theodore Robie, East Orange, N. J., and Franz Kallmann, New York City, serving as chairman and co-chairmen, respectively. The four papers at the first symposium will include "Adrenalin Metabolism in Schizophrenia," by Dr. Abraham Hoffer, Saskatoon, Saskatchewan. For information, write the Eastern Psychiatric Research Association, Inc., 40 Fifth Ave., New York City.

Medical Assistants Meeting in Philadelphia.—The third annual convention of the American Association of Medical Assistants will be held at the Benjamin Franklin Hotel, Philadelphia, Oct. 16-18. At the luncheon Oct. 16, Dr. Robert L. Schaeffer will present "The Golden Touch of the Pennsylvania Dutch." The banquet speakers that evening will be Dr. Louis M. Orr, President, American Medical Association presenting, "Greetings from the American Medical Association," and Dr. Robert J. Samp, Madison, Wis., speaking on "Medical Assistants Anonymous." Dr. Steward H. Smith, San Diego, Calif., will moderate an afternoon seminar Oct. 17 with Dr. Frank A. Elliott, Philadelphia, presenting, "Changing Patterns in Medicine." A medical technical panel discussion will be moderated by Dr. Robert A. Royster, Evansville, Ind., the morning of Oct. 18. Registration fee is $16. The executive office of the association is at 510 N. Dearborn St., Chicago 10. Mrs. Stella Thurnau is executive secretary.

Scholarships for Negro Students.—To "help lessen the nation's shortage of Negro physicians and surgeons," the Alfred P. Sloan Foundation granted $60,000 for 10 four-year medical school scholarships to promising Negro college students. Announcement of the awards for the 1960-1961 academic year was made by Arnold H. Zurcher, Ph.D., executive director of the foundation, and Dr. Franklin C. McLean, emeritus professor of physiology at the University of Chicago, The School of Medicine, and secretary-treasurer of National Medical Fellowships, Inc., Chicago. Since it was founded in 1946, National Medical Fellowships has awarded $819,333 in fellowships, scholarships, and loans to 262 Negro men and women striving for medical careers. The National Medical-Sloan Foundation scholarships will be offered only to "talented Negro students who have demonstrated outstanding academic ability in college, scored high in the Medical College Admission Test, which will be held next Oct. 31, and have been accepted for admission to medical school." Besides tuition payments, the awards provide stipends to needy scholarship winners. For information, write the National Medical Fellowships, Inc., 951 E. 58th St., Chicago 37.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States, its territories and possessions in the weeks ended as indicated:

Area	Sept. 12, 1959		Sept. 13 1958
	Paralytic Type	Total Cases	Total
New England States			
Maine	3	3	..
New Hampshire	1	1	..
Vermont	1	1	2
Massachusetts	7	11	5
Rhode Island	..	..	1
Connecticut	3	7	2
Middle Atlantic States			
New York	16	41	27
New Jersey	8	9	29
Pennsylvania	14	18	12
East North Central States			
Ohio	4	15	38
Indiana	2	10	9
Illinois	13	26	17
Michigan	7	51	120
Wisconsin	1	4	3
West North Central States			
Minnesota	12	19	4
Iowa	10	41	10
Missouri	12	23	4
North Dakota	3	3	3
South Dakota	..	..	..
Nebraska	4	8	3
Kansas	5	16	3
South Atlantic States			
Delaware	..	..	2
Maryland	..	2	..
District of Columbia	1	2	..
Virginia	21	22	4
West Virginia	19	22	11
North Carolina	8	10	3
South Carolina	..	3	3
Georgia	4	4	1
Florida	3	5	7
East South Central States			
Kentucky	3	4	3
Tennessee	15	22	4
Alabama	8	12	4
Mississippi	2	3	2
West South Central States			
Arkansas	10	15	..
Louisiana	5	5	5
Oklahoma	7	9	3
Texas	..	9	21
Mountain States			
Montana	..	..	11
Idaho	..	..	2
Wyoming	..	..	..
Colorado	3	3	..
New Mexico	1	2	..
Arizona	3	6	1
Utah	..	1	1
Nevada	2	2	..
Pacific States			
Washington	8	8	2
Oregon	6	10	..
California	18	20	12
Alaska	..	..	..
Hawaii	..	..	5
Territories and Possessions			
Puerto Rico	..	..	..
Total	273	508	399

Physicians Meet in Providence.—The American College of Physicians will hold a regional meeting for New England, Quebec, and the Atlantic Provinces at the Sheraton-Biltmore Hotel and the Rhode Island Hospital, Providence, R. I., Oct. 23-24. The scientific program includes 12 papers and three panel discussions under the title, "The Care and Preservation of Key Personnel." Dr. Chester S. Keefer, Boston, president-elect of the college, will moderate a panel and will present "Executive Health—An Important National Asset," followed by the following papers:

Digestive Tract Disorder, Dr. Chester M. Jones, Boston.

The Prevention of Disability from Cardiovascular Disease, Dr. C. Sidney Burwell, Boston.

The Nutritional Problems of American Adults, Jean Mayer, Ph.D., Boston.

Speakers at the banquet Oct. 23, 7:30 p. m., will be Dr. Keefer, Mr. Edward R. Loveland, Executive Secretary of the college, and Dr. Edward C. Rosenow Jr., Philadelphia. A radiologic quiz session will be conducted by Dr. Thomas Forsythe, Providence. Dr. Marshall N. Fulton, Governor for Rhode Island, is general chairman of the meeting.

Annual Meeting on School Health.—The 33rd annual meeting of the American School Health Association will be held Oct. 17-23 with headquarters at the Claridge Hotel, Atlantic City, N. J., in association with the American Public Health Association. A panel discussion including members of the National Association for Mental Health is planned for the afternoon of Oct. 18. Under the topic Mental Hygiene in the Classroom, the keynote speaker at the general session, with Delbert Oberteuffer, Ph.D., president of the association, presiding, will be Dr. C. Morley Sellery, Los Angeles, presenting, "Evaluation of Health Education and Health Services, Los Angeles City School Study." The afternoon of Oct. 21 the following papers will be presented under the topic "Evaluation of Processes of School Health Services and Health Education:"

How We Did It in Los Angeles, Dr. Sellery.

Experiences of New York State Four Year Research Study, Dr. Ruth A. Lawrence, Rochester, N. Y.

How the Educators Evaluate School Health Programs, John B. Geissinger, Ph.D.

The speaker at the annual banquet Oct. 21, 7 p. m., will be Rear Admiral Bartholomew W. Hogan, surgeon general of the Navy. Presentation of the William A. Howe Award at the banquet will be made to Dr. Guy N. Magness, University City, Mo.

Obstetricians and Gynecologists Meet in Omaha.—District VI of the American College of Obstetricians and Gynecologists will hold its annual meeting in the Sheraton-Fontanelle Hotel, Omaha, Oct. 16-17. Participating jointly in the meeting will be the obstetrical and gynecological societies of Illinois, Iowa, Minnesota, Nebraska, North Dakota, South Dakota, and Wisconsin. The scientific program will include the following papers:

- The Ovary in Pregnancy, Dr. Wallace W. Nelson, Grand Forks, N. D.
- Fetal Salvage in RH Sensitized Women, Clifford P. Goplerud, Iowa City.
- Use of Trilene in Obstetrics, Dr. Samuel T. Thierstein, Lincoln, Neb.
- Cirrhosis of the Liver and Pregnancy, Dr. Richard M. Moore, Des Moines.
- Urinary Stress Incontinence in the Female, Dr. Burton R. Bancroft, Kearney, Neb.
- Procedures to Combat the Incompetent Cervix—A Critical Evaluation, Drs. Frederick J. Stoddard, Frederick J. Hofmeister, and William P. Wendt, Milwaukee.

Dr. Harry E. Harvey, of Lincoln, will be moderator of a panel, "Urological Complications in Gynecologic Surgery." The program also will include round tables on perinatal mortality, maternal mortality, endocrine problems, abnormal uterine bleeding, geriatric gynecology, and obstetric analgesia. The annual dinner dance will be held on Friday evening, Oct. 16. For information, write to Mr. Donald F. Richardson, Executive Secretary, ACOG, Box 749, Chicago 90.

EXAMINATIONS AND LICENSURE

MEDICAL SPECIALTY BOARDS

American Board of Anesthesiology: *Written.* Various locations, July 8. Final date for filing application is January 8. *Oral.* Miami Beach, April 25-29. [illegible] ready on file. Sec., Dr. Forrest E. [illegible] ington Ave., Hartford 5, Conn.

American Board of Dermatology: *Oral.* Oklahoma City, Jan. 15-18, 1960. The final date for filing all applications was July 1, 1959. Sec., Dr. Beatrice M. Kesten, One Haven Ave., New York 32.

American Board of Internal Medicine: *1959 Schedule—Written,* Oct. 19. Final date for filing application was May 1. *Oral.* For candidates on the East Coast, Nov. 6-7, 9-10. Final date for filing application was March 1. *Oral.* Philadelphia, March 11-12. Final date for filing application is January 15. Sec.-Treas., Dr. William A. Werrell, One West Main St., Madison 3, Wis.

American Board of Neurological Surgery: Examination given twice annually, in the spring and fall. In order to be eligible a candidate must have his application filed at least six months before the examination time. New Haven, Nov. 14-16. Sec., Dr. Donald D. Matson, 300 Longwood Ave., Boston, Mass.

American Board of Obstetrics and Gynecology: *Part I, Written.* Chicago, January 16. Candidates notified of their eligibility to participate in the Part I examination must submit their case abstracts within thirty days of notification of eligibility. *Part II, Oral.* Chicago, April 11-16. Final date for filing application was August 1. Sec., Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

American Board of Ophthalmology: *Written.* January 1960 in various cities. Applications for the 1960 written examination must be filed before July 1. *Oral.* 1960, San Francisco, May; Chicago, October. Sec., Dr. Merrill J. King, Box 236, Cape Cottage Branch, Portland, Maine.

American Board of Orthopaedic Surgery: *Part II.* Chicago. Jan. 19-21, 1960. The deadline for the receipt of application was Aug. 15. Sec., Dr. Sam W. Banks, 116 South Michigan Ave., Chicago 3.

American Board of Pathology: New Orleans, Nov. 12-14. Final date for filing application was October 1. Sec., Dr. Edward B. Smith, Indiana University Medical Center, 1100 W. Michigan St., Indianapolis 7.

American Board of Pathology: *Examination in Forensic Pathology.* New Orleans, Nov. 13. Final date for filing application is October 1. Sec., Dr. Edward B. Smith, Indiana University Medical Center, 1100 W. Michigan St., Indianapolis 7.

American Board of Pediatrics: *Oral.* Washington, Dec. 4-6. *Written.* Jan. 8. Final date for filing application for the written examination is Dec. 1. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Physical Medicine and Rehabilitation: *Oral and Written.* New York, June 17-18. Sec., Dr. Earl C. Elkins, Mayo Clinic, Rochester, Minn.

American Board of Plastic Surgery: *Oral and Written.* Miami, Fla., Oct. 15-17. Final date for submitting case reports was July 1. *Oral and Written.* Milwaukee, May 1960. Final date for filing application is January 1. Corresponding Secretary, Mrs. Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8, Mo.

American Board of Psychiatry and Neurology: Chicago, Oct. 19-20; New York, Dec. 14-15; San Francisco, Mar. 14-15, 1960. Training credit for full time psychiatric and/or neurologic assignment in unapproved military programs or services between the dates of Jan. 1, 1950 and Jan. 1, 1954 was terminated on Jan. 1, 1959. Sec., Dr. David A. Boyd, 102-110 Second Ave. S. W., Rochester, Minn.

American Board of Radiology: *Examination.* Washington, Dec. 6-9. Deadline for filing application was July 1. Candidates examined in Diagnostic Roentgenology may expect to be examined in Physics. Obligatory examination in Nuclear Medicine has been postponed until after June 30, 1962 for those candidates being examined in Radiology or Therapeutic Radiology. Until that time the examination in Nuclear Medicine will be optional for those who wish to be examined in Radiology or Therapeutic Radiology. *Examination.* Cincinnati, Spring 1960. Deadline for filing applications is Jan. 1. A special examination in Nuclear Medicine (for those diplomates in Radiology or Therapeutic Radiology) will be offered provided there are sufficient applications. Sec., Dr. H. Dabney Kerr, Kahler Hotel Bldg., Rochester, Minn.

American Board of Surgery: *Written* examinations (Part I) will be held on December 2, 1959 at various centers to be announced later. Closing date for filing applications was August 1. Those completing training requirements after September 30 cannot be considered for the Part I examination in December of the same year. *Oral examinations (Part II):* Baltimore, Oct. 19-20; Cincinnati, Nov. 9-10; Boston, Dec. 14-15; Winston-Salem, No. Car., Jan. 18-19; New York, N. Y., Feb. 15-16; New Orleans, Mar. 14-15; Kansas City, Kans., May 16-17, and Los Angeles, May 19-20. Sec., Dr. John B. Flick, 1617 Pennsylvania Blvd., Philadelphia 3.

American Board of Urology: *Written.* Approximately 25 cities throughout the country, December 4, 1959. *Oral-Clinical* and *Examination in Pathology.* Chicago, February 1960. Final date for filing application was Sept. 1, 1959. Sec., Dr. William Niles Wishard, 30 Westwood Rd., Minneapolis 26, Minn.

DEATHS

Adams, Montague Sebert Ⓜ Anniston, Ala.; Tulane University School of Medicine, New Orleans, 1938; interned at Employees' Hospital of the Tennessee Coal, Iron and Railroad Company, Fairfield; associated with the Anniston Memorial Hospital; died July 26, aged 48.

Allen, Robert L. Ⓜ Rockland, Maine; Johns Hopkins University School of Medicine, Baltimore, 1941; interned at the Johns Hopkins University Hospital in Baltimore, where he served a residency; interned at the Massachusetts General Hospital in Boston; served a residency at the Union Memorial Hospital in Baltimore; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; consultant, Waldo County General Hospital in Belfast; on the staffs of Camden Community Hospital in Camden and the Knox County General Hospital; died July 31, aged 43.

Baker, Harold Frederick Ⓜ Muncy, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1917; veteran of World War I; during World War II served at the Army Medical Center in Washington, D. C.; honorary member of the medical staff of the Muncy Valley Hospital; director of the Muncy Banking Company; served as councilman; died July 23, aged 69.

Baldridge, John Henry, Batavia, Iowa; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1904; veteran of World War I; died in Agency July 18, aged 80.

Brent, Meade Stith Ⓜ Heathsville, Va.; Medical College of Virginia, Richmond, 1908; specialist certified by the American Board of Psychiatry and Neurology, Inc.; member of the American Psychiatric Association; formerly superintendent of the Central State Hospital in Petersburg; served on the governor's advisory board on mental hygiene; died in the Medical College Hospital in Richmond, July 20, aged 77.

Brown, Harry Guy Ⓜ Cincinnati; Eclectic Medical College, Cincinnati, 1921; veteran of World War II; died in the Bethesda Hospital July 20, aged 64.

Burgett, Charles E., Dayton, Ohio; Kentucky School of Medicine, Louisville, 1898; associated with the Good Samaritan Hospital, where he died July 24, aged 93.

Carrozza, Natale Salvatore, Brooklyn; Dalhousie University Faculty of Medicine, Halifax, N. S., Canada, 1932; veteran of World War II; associated with the Long Island College Hospital, Brooklyn Eye and Ear Hospital, and Harlem Eye and Ear Hospital; died in the Veterans Administration Hospital July 19, aged 56.

Nesselrode, Clifford Calvin Ⓜ Kansas City, Kan.; born in Wellington, Kan., Feb. 25, 1880; University of Kansas School of Medicine, Kansas City, 1906; for many years professor of clinical surgery at his alma mater, where he joined the faculty in 1908; member of the founders group of the American Board of Surgery; received a medal and citation for cancer control work from the American Cancer Society, of which he was a director, past-president and past-vice-president, and past-president of the Kansas division; from 1909 to 1912 secretary of the Wyandotte County Medical Society and president in 1916; past-president of the Kansas City Academy of Medicine, Kansas City Southwestern Clinical Society, Kansas Medical Society, and Kansas City Surgical Society; member of the Western Surgical Association and the American Association for the Surgery of Trauma; fellow and from 1940 to 1950 governor of the American College of Surgeons; veteran of World War I; a member of the Officers Reserve Corps from 1919 to 1953; during World War II an examiner for draft board number five; trustee of the Boylan Fund; past-president of the Chamber of Commerce, which he helped establish; director of the Commercial National Bank and the Kansas Trust Company; in 1920 a director of the Citizens State Savings Bank; past-president of the Medical Alumni Association of the University of Kansas; associated with the Bethany and Providence hospitals and St. Margaret's Hospital, where he died July 18, aged 79.

Poage, Lydia Lloyd, Toledo, Ohio; Laura Memorial Woman's Medical College, Cincinnati, 1902; formerly associated with the Dayton (Ohio) State Hospital; member of the American Psychiatric Association; died July 19, aged 87.

Robinson, Donald Edward Ⓜ Burlington, N. C.; Harvard Medical School, Boston, 1927; certified by the National Board of Medical Examiners; specialist certified by the American Board of Pediatrics; served on the staff of the Alamance County Hospital; died in the Grace Hospital, New Haven, Conn., July 19, aged 57.

Rosenblum, David Hyman Ⓜ Beverly Hills, Calif.; University of Illinois College of Medicine, Chicago, 1925; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; on the staffs of St. John's Hospital in Santa

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Ⓜ Indicates Member of the American Medical Association.

Monica and Mount Sinai Hospital in Los Angeles; associated with Cedars of Lebanon Hospital in Los Angeles, where he died July 22, aged 61.

Sandberg, Ivan Magnus Ⓜ Princeton, Ill.; University of Illinois College of Medicine, Chicago, 1932; interned at the Grant Hospital in Chicago; veteran of World War II; associated with the St. Margaret's Hospital in Spring Valley and Perry Memorial Hospital; county coroner; died June 26, aged 55.

Schiff, George Nathaniel Ⓜ Captain, U. S. Navy, retired, Waukegan, Ill.; Northwestern University Medical School, Chicago, 1925; served internships at Philadelphia General Hospital and Roseland Community and Michael Reese hospitals in Chicago; commissioned in the regular Navy in 1942 and retired March 31, 1959; veteran of World War II; died in the U. S. Naval Hospital in Great Lakes, Ill., Aug. 3, aged 59.

Smith, Marvin Henry Ⓜ Miami, Fla.; Atlanta School of Medicine, 1910; also a graduate in pharmacy; member of the American College of Gastroenterology; founder and past-president of the Southern Gastroenterological Association; died July 23, aged 80.

Steindler, Arthur Ⓜ Iowa City, Iowa; born in Vienna, Austria, June 22, 1878; Medizinische Fakultät der Universität, Vienna, Austria, 1902; in 1913 joined the faculty of the State University of Iowa College of Medicine, where he was a distinguished service professor, and for many years professor and head of the department of orthopedic surgery; on May 27, 1941, special exercises were held to mark the presentation to the university of the portrait of him, a gift of former students and staff members; at one time professor of orthopedic surgery at the Drake University College of Medicine in Des Moines; delivered twenty lectures in Spanish on orthopedic subjects and held several clinics in Mexico City, under the auspices of the National University of Mexico, where he was professor extraordinary; on Sept. 9, 1935, delivered the third annual William Benham Snow lecture at the meeting of the American Congress of Physical Therapy; specialist certified by the American Board of Orthopaedic Surgery; member and past-president of the American Orthopaedic Association; member of the Clinical Orthopaedic Society, American Academy of Orthopaedic Surgeons, American Society for Surgery of the Hand, and Sigma Xi; fellow of the American College of Surgeons and the International College of Surgeons, of which he was a regent and vice-president; held honorary memberships in various professional societies of Europe and Latin America; honorary fellow of the Royal College of Surgeons of England; chief of orthopedic surgery at the Mercy Hospital; died July 21, aged 81.

Traynham, Benjamin Lanier, Sweetsprings, W. Va.; University College of Medicine, Richmond, 1903; veteran of World War I; died July 14, aged 82.

Upton, William Henry, Asbury Park, N. J.; University of the City of New York Medical Department, 1893; died July 14, aged 90.

Walsh, John Joseph Ⓜ Chicago; Loyola University School of Medicine, Chicago, 1933; veteran of World War II; associated with the Presbyterian-St. Luke's Hospital; specialist certified by the American Board of Otolaryngology; died July 29, aged 51.

Watson, Tolbert Ⓜ Sunnyvale, Calif.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1908; a director of the Sunnyvale Branch of the Bank of America; for 14 years a member of the Sunnyvale Elementary School District board of trustees; a charter member and past-president of the Sunnyvale Rotary Club; died July 30, aged 79.

Welch, Thomas Lee Ⓜ Port Arthur, Texas; Flint Medical College of New Orleans University, New Orleans, 1907; died in St. Mary's Hospital July 14, aged 76.

Weller, Joseph Newton, Fort Lauderdale, Fla.; Jefferson Medical College of Philadelphia, 1901; past-president of the Summit County (Ohio) Medical Society; for many years practiced in Akron, Ohio, where he was on the staff of the City Hospital; died July 11, aged 81.

Wells, Samuel Robert Ⓜ Hagerstown, Md.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1928; member of the American Academy of General Practice; past-president of the Washington County Medical Society; appointed first deputy county medical examiner for Washington County in 1936 and served as coroner continuously since; associated with the Washington County Hospital, where he died July 21, aged 54.

White, Milton Noble Ⓜ Philadelphia; Howard University College of Medicine, Washington, D. C., 1898; died June 26, aged 87.

Wilkinson, Albert Livingston Ⓜ Baltimore; University of Maryland School of Medicine, Baltimore, 1903; associated with St. Joseph's Hospital; died July 28, aged 80.

Woods, Wilfrid P. Ⓜ Longmont, Colo.; Ensworth Medical College, St. Joseph, Mo., 1906; associated with Longmont Hospital; died July 13, aged 77.

Wright, Thurman Gregory, Spartanburg, S. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1916; associated with Mary Black Hospital; died July 14, aged 68.

FOREIGN LETTERS

INDIA

Triamcinolone.—V. R. Shah and co-workers (*Journal of Postgraduate Medicine,* vol. 5, April, 1959) studied the action of triamcinolone in 23 patients (7 with rheumatoid arthritis, 5 with status asthmaticus, 3 with emphysema and cor pulmonale, 3 with tuberculous meningitis, 2 with viral encephalitis, 2 with acute nephritis, and 1 with nephrosis) to determine its effects on sodium and water retention, and the nature and extent of any side-effects produced. The dosage, given orally, varied with the condition and individual response but the usual initial dose was 12 to 16 mg. per day in three or four divided doses. This was reduced gradually by 2 mg. every third day till a maintenance dose was reached. The duration of therapy ranged from 1 to 14 weeks.

The therapy with triamcinolone had to be discontinued in one of the seven patients with rheumatoid arthritis because of puffiness of the face, weight gain, and epigastric pain. Complete remission was obtained in three of these patients, marked improvement in one, and slight improvement in two. Those in stage 1 and 2 showed a good response while those in stage 4 showed only slight improvement. In most of these patients joint pain and swelling diminished within four days of treatment. None of them showed any retention of sodium and water except the one whose treatment had to be stopped. This patient had an associated emphysema. In the five patients with status asthmaticus the symptoms could not be controlled by the usual therapy but all showed a good response with triamcinolone. Such minor side-effects as generalized aching, burning in the throat, weakness, and anorexia were frequent. None showed any change in serum sodium and potassium levels, body weight, or blood pressure.

The response in the three patients with emphysema and cor pulmonale was poor. The three with tuberculous meningitis received this drug in addition to specific therapy. Clinical improvement was evident within four days of therapy and the cerebrospinal fluid became normal within two to three weeks. There were no side-effects. The two patients with viral encephalitis showed dramatic improvement. The response was good with complete recovery in both patients with acute nephritis but the drug failed to produce diuresis in the patient with nephrosis. No side-effects were observed.

Hemoglobin A2.—J. B. Chatterjee and co-workers (*Bulletin of Calcutta School of Tropical Medicine,* vol. 7, Jan., 1959) stated that the normal adult hemoglobin or hemoglobin A is now known to consist of different components described as Hb.A1, Hb.A2, Hb.A3, and Hb.A4. The A2 component is increased in thalassemia trait and a raised Hb.A2 is now used as a diagnostic test for this condition. The authors studied this component by paper electrophoresis of blood samples from 20 normal subjects, 63 patients with heterozygous thalassemia, 16 with homozygous thalassemia, and 70 with heterozygous Hm.E. Compared to normal controls, the Hb.A2 was markedly raised in those with heterozygous thalassemia. It was less markedly raised in many of those with homozygous thalassemia. The suppression of Hb.A in homozygous thalassemia was found to be due mostly to suppression of Hb.A1. The relative increase of Hb.A2 may be an expression of the thalassemia gene.

SWEDEN

Hydrochlorothiazide.—A. Lundberg and co-workers (*Opusc. med.* 4:129-136, 1959) gave the new, hydrogenated chlorothiazide derivative, hydrochlorothiazide, to 18 patients. Eleven patients had cardiac edema, one had ascites, one had atrial fibrillation without edema, and five suffered from essential hypertension. The diuretic action appeared to be comparable to that of chlorothiazide and was achieved by smaller doses. The authors concluded that chloride was probably lost in excess of sodium with the new substance, which would imply a greater risk of alkalosis than with chlorothiazide.

Operability of Lung Cancer.—While surgery is as yet the only treatment offering any chance of recovery from lung cancer, more than half of all pulmonary carcinomas are inoperable by the time they are diagnosed. Operation is usually contraindicated by massive remote metastasis or by massive infiltration of the mediastinum. Lawe Svanberg and co-workers (*Acta chir. scandinav.* 117:8-17, 1959) appraised the value of bronchoscopic examination and analysis of lung function in 91 patients to determine the operability of bronchial cancer. Examination included bronchoscopy and spirometry in all patients and bronchospirometry in 76. In the remaining 15 patients spirometry was usually supplemented by angiopneumography. Bronchography was also done in most patients but, as far as operability was concerned, it yielded no more informa-

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The items in these letters are contributed by regular correspondents in the various foreign countries.

tion than was obtained by bronchoscopy. The frequency of cancer was slightly higher in the right lung than in the left. The upper, lower, and middle lobes were involved with roughly equal frequency; 40 patients underwent lung resection (20 had a lobectomy and 20 had a pneumonectomy). Explorative thoracotomy was performed on 33.

For various reasons 18 patients were not operated on; 10 were in too poor a general condition, 4 had metastasis in the supraclavicular lymph nodes, in 2 the vena cava superior was obstructed, and 2 had paresis of the laryngeal recurrent nerve. Results showed that any change in the shape or motility of the carina was a serious sign frequently suggestive of inoperability as found on bronchoscopic examination. In 2 of 16 patients, however, radical operation could be performed. Pronounced rigidity of the main bronchus also contraindicated operation. On the other hand, endobronchial invasion of the proximal segment of a main bronchus did not necessarily mean that the case was inoperable. Spirometric examination yielded valuable information on lung function and thereby in the evaluation of the operability of cancer. In these patients lung function was often impaired not only by the carcinoma but also by emphysema and chronic bronchitis.

Bronchospirometry yielded important information not only on the functional state of the "healthy" lung but also on that of the affected lung. Determination of the decrease in the oxygen uptake of the lung due to the cancer gave valuable information on the prospects of operation. When more than 40% of lung function had been lost radical operation was possible in only 2 (8%) of 25 patients as against 23 (79%) of 29 when the loss was less than 20%. Even if bronchoscopy and bronchospirometry strongly suggested that a given lesion was inoperable, this fact did not contraindicate thoracotomy, because this operation is attended by hardly any risk. The information obtained by bronchoscopy and spirometry-bronchospirometry is prognostically valuable and provides important guides for the surgeon in evaluating operability.

UNITED KINGDOM

Electronic Thermometer.—A new type of electronic thermometer which will measure temperature as soon as it is placed in contact with an object has been developed in England. Results achieved so far suggest an important advance in clinical medicine—the virtually instantaneous measurements of the temperature of the human body within a second or so of its initial application to the skin or mucosa. The device depends on the use of a temperature-sensitive metallic oxide lead which is connected to a sensitive direct current bridge-measuring circuit. The complete unit weighs 4 lb. and measures 8½ by 6 by 4½ in. One of its advantages is that the temperature probe can be operated at a distance of up to 1,000 ft. from the recording device.

British Medical Association Council on Advertising and Publicity.—The British Medical Association adopted a recommendation of the Central Ethical Committee on advertising. The Council on Advertising and Publicity has noted with concern the increasing frequency with which doctors' names receive public mention in the press, radio, and television and concluded that some doctors voluntarily seek undue publicity. The council considered that it is natural that senior and eminent members of the profession are more likely to be exposed to such publicity, and it appealed to them to uphold the traditions of the profession and to conform to its ethical standards. A comprehensive statement on indirect methods of advertising draws attention to the need for vigilance in such matters. This was circulated to all doctors in the United Kingdom. The BMA warned doctors to avoid discussions in the lay press on controversial points of medical science and treatment and to exercise caution when stating their views to the lay press or when giving statements to it. While it did not object to doctors writing signed items for the lay press, the association deprecated frequent contributions of this type, which could, under some conditions, be used for self-advertisement. Books, articles, and lectures for the lay public must be written with care as they may lead to the charge of self-advertising.

Advice was also given on press interviews, which might be misreported and put the doctor in a position of embarrassment. The publication of photographs was regarded as a most undesirable form of publicity, and doctors were asked to ensure that their photographs would not be published in the lay press. The use of the latter for the direct advertising of the professional activities of an individual doctor was expressly forbidden.

The association did not object to television and radio appearances by doctors, provided they remained anonymous and observed the appropriate ethical safeguards. It considered that great caution is necessary in public discussions on theories and treatment of disease, because of the misinterpretation that might be put on these by an uninformed public. The BMA suggested that there should be a close link between itself and the BBC to control the broadcasting and televising of medical subjects. It considered it to be highly unethical for a doctor to participate in sound or television programs which are presented for, or on behalf of, firms using sponsored radio or television as a means of advertising. The BMA believed that advertising by the profession in general would destroy those traditions of dignity and self-respect which have helped to give the British medical profession its high status.

CORRESPONDENCE

PERIODIC DISEASE

To the Editor:—An editorial in The Journal, June 6, page 678, calls attention to the preponderance of one form of periodic disease, namely, periodic peritonitis, among Jews, Arabs, and Armenians, and to some cases among Turks and Italians. It should be emphasized that the disorder also occurs in other Aryans and in Japanese and Negroes. The two new names recently proposed for it do not help to clarify the problem. "Familial Mediterranean fever" (Heller and others: *A. M. A. Arch. Int. Med.* 102:50 [July] 1958) is too ethnically or geographically restrictive, and abdominalgia, not fever, is the outstanding complaint. "Familial recurring polyserositis" (Priest and Nixon: Program, American College of Physicians, April 20-24, 1959, p. 67) implies multiple serous membrane involvement which is not always present. Furthermore, the disorder is not always familial but may affect only one member, without evidence of heredity.

The only important etiological clues or additions to knowledge to date are the suggested causative relation of etiocholanolone (Bondy and others: *Yale J. Biol. & Med.* 30:395 [June] 1958), the possible therapeutic value of fluorometholone (Smith, L. G.: Personal communication to the author), and the occasional occurrence of nephropathy and amyloidosis. The ultimate cause and the reason for the regular or irregular recurrent episodes with intervals of good health are as much of a mystery as ever.

Nephropathy, fatal in some patients with long-standing periodic peritonitis (Mamou and Cattan: *Semaine hôp. Paris* 28:1062 [April] 1952) has given rise to confusion as to its cause and whether it is a part, a complication, or a sequela of the disorder. A partial solution to that problem was the discovery of amyloidosis in a few instances studied post mortem (Heller and others: *A. M. A. Arch. Int. Med.* 102:50 [July] 1958; Tuqan: *Ann. Int. Med.* 49:885 [Oct.] 1958; Alkalay and others: *J. A. M. A.* 170:653 [June 6] 1959), and this has led to a dubious suggestion of including the disorder in the group of collagen diseases. Actually, the occurrence of amyloidosis seems reasonably easy to explain. Periodic peritonitis is characterized by years of recurrent bouts of fever and hyperglobulinemia. Persistent hyperglobulinemia, as in chronic infection or suppuration and during experimental oft-repeated parenteral injection of foreign protein, is an important factor in the cause of amyloidosis (Eklund and Reimann: *Arch. Path.* 21:1 [Jan.] 1936, cited in editorial *J. A. M. A.* 106:1200 [April 4] 1936).

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INJECTIONS INTO THE BACK

To the Editor:—In The Journal, Aug. 8, page 1768, Schneider and associates reported a tragic case in which material injected into the back in an effort to relieve low back pain had entered the spinal canal and resulted in serious involvement of the nervous system and death. It may be thought that this is a unique occurrence, and for that reason I should like to call attention to the fact that other instances of this kind have occurred.

In 1957 we were consulted by a 53-year-old woman who had suffered from pain in her back for four years. In May of that year an injection had been made into her back. Immediately after the last of these injections she experienced severe pain across the lower part of her back that radiated to both legs. Her entire body below the level of the umbilicus became numb. Her legs became weak, and she was unable to urinate. There was temporary improvement in the next week, and then there was steady progression to a complete spastic paraplegia. We operated on this patient on Oct. 7, 1957, and found an intense proliferative archnoiditis with cyst formation in the subarachnoid space and compression and constriction of the spinal cord. Removal of the thickened arachnoid membrane provided only temporary relief, and this woman continues to suffer from a complete spastic paraplegia with severe spasmodic flexor contractions.

This is another instance of the potential dangers of injecting material into the back, particularly if there is any possibility of its entering the spinal subarachnoid space, as obviously occurred in this instance.

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Chicago 11.

MEDICAL LITERATURE ABSTRACTS

NEUROLOGY & PSYCHIATRY

Cerebral Necrosis as a Consequence of Radiotherapy for Tinea Capitis. A. Ravina, M. Pestel and J. Lapresle. Presse méd. 67:1063-1064 (May 27) 1959 (In French) [Paris].

The authors report the occurrence of severe cerebral necrosis in a 6-year-old boy after roentgen irradiation of the scalp for tinea capitis. The child was subjected to one session of radiation treatment, consisting of 350 r to each of 4 fields irradiated (5 minutes each) with a voltage of 110 kv. at an intensity of 12 ma. and a focal distance of 22 cm. An early fall of the hair was succeeded by suppuration lasting for several months, and when it subsided, the scalp was thin and hairless. Five months later the child had spasmodic contractions, first of the upper, then of the lower extremities. Three months later convulsive crises appeared with a bilateral Babinski sign.

When admitted to the hospital, the patient presented severe motor deficiency on the right side, a basic hypotonia; he was unable to stand or walk, and, when sitting, he could not keep his head erect. There was apparently no subjective or objective disorder, but it was difficult to examine him because his psychomotor development was disturbed. His condition rapidly worsened. A phase of general excitement, followed by crises of Bravais-Jacksonian epilepsy, appeared. All this began in the left arm and extended to the face and the lower left extremity, after which the patient displayed marked confusion. Later, crises of clonic spasms of the face, associated with paroxysmal nystagmus, set in and lasted for one hour. After an improvement lasting for a few days, the temperature rose to 39 C (102.2 F) and then to 40.5 C (105 F), and the patient died suddenly during a convulsive crisis 13 months after the roentgen-ray treatment.

The only lesions found at autopsy were those in the brain, i. e., necrosis of the white substance associated with important vascular lesions. These findings are usually found after exposure of the cerebral parenchyma to roentgen irradiation. This accident was evidently caused by an error in the radiation dosage, accompanied by imperfections in technique and equipment. It provides one more proof of the care needed in using x-rays for scalp treatment.

Deaths Associated with Electroplexy. J. C. Barker and A. A. Baker. J. Ment. Sc. 105:339-348 (April) 1959 [London].

A recent court case revealed that in 1957, nearly 20 years after electric convulsive therapy (E. C. T.) had first been used for the treatment of mental disorder, no uniform technique had yet been evolved. The medical witnesses were unable to agree on the use of muscle relaxants or mechanical restraint, but were agreed that there were certain risks attendant upon the use of electroplexy, especially the risk of fractures and the risk to life. It was argued that, had the plaintiff received a relaxant drug, he might not have sustained bilateral acetabular fractures, but might have suffered an even worse disaster, namely, death. This controversy induced the authors to inquire into the death rate associated with electroplexy, and to examine the causes of death, noting especially any possible relationship between death and particular E. C. T. techniques. Two questionnaires were sent to 13 teaching hospitals in London and to 42 mental hospitals. Replies to questionnaire 1 showed that no uniform E. C. T. technique was practiced in Britain. Replies to questionnaire 2 revealed, among other facts, that the total number of treatments carried out during the 2-year period at 42 hospitals replying to item 1 of the circular was approximately 259,000. The number of deaths associated with E. C. T., from all the replies received during this period, was 9 (occurring within 3 days). Therefore, the incidence of death due to E. C. T. was approximately one death in 28,000 treatments, giving a treatment fatality rate of 0.0036%.

The occasional death following E. C. T. necessitates a careful physical examination, with special reference to the cardiovascular system, for all patients, especially those in middle and later life. The day-to-day physical health of these patients should be carefully checked between treatments. Great care should be shown with patients in whom technical difficulties have been encountered during previous treatments, and attention should be directed to changing techniques, generally in the direction

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The place of publication of the periodicals appears in brackets preceding each abstract.

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of modified to unmodified E. C. T. Additional medication should be reduced to the barest minimum. Electrical modification of the convulsion may be safer than chemical modification in these patients. Nevertheless, there is no evidence to show that any particular E. C. T. technique carries less risk to life than others.

Neuromyopathy from Cancer: Case Combined with Atrophy of the Hypophysis from Other Cause. J. H. Vogt. Tidsskr. norske lægefor. 79:605-608 (May 15) 1959 (In Norwegian) [Oslo].

A case of coincident hypopituitarism and peripheral neuromypathy from cancer (neuromyopathia e cancere) in a woman, born in 1898, is described. In 1937 she had a grave purulent peritonitis followed by prolonged shock. From December, 1956, on there were gradually increasing symptoms of neuromyopathy; the patient felt weak, was often nauseated, and had a feeling that her knees would give way. She had a tendency to sideropenic anemia, and there were symptoms of the Plummer-Vinson syndrome. After iron medication she was less listless but largely incapacitated because of general symptoms, failing memory, and weakness in the proximal muscles of the lower extremities. In 1957 laboratory examinations established a definite hypophysial hypothyreosis and a slight hypophysial insufficiency of the adrenal cortex. Response to adequate endocrinologic therapy was poor. The neuromyopathy became aggravated. In March, 1958, concurrent bronchial cancer was diagnosed. Both neuromyopathy and cancer regressed during roentgen-ray treatment, but accidental fracture of the femoral neck and pulmonary embolism caused death. Autopsy showed undifferentiated bronchial cancer with metastases to the mediastinal lymph nodes and a large embolus in the right pulmonary artery. The hypophysis was atrophic and infiltrated with connective tissue, the uterus was strongly atrophic, and the ovaries were hyalinized and atrophic.

Evaluation of Certain Drugs in Geriatric Patients: Effects of Chlorpromazine, Reserpine, Pentylenetetrazol U. S. P., and Placebo on Eighty-Four Female Geriatric Patients in a State Hospital. D. B. Robinson. A. M. A. Arch. Gen. Psychiat. 1:41-46 (July) 1959 [Chicago].

In an attempt to determine what advantages and disadvantages the so-called tranquilizing drugs have over older therapies, patients from the women's geriatrics unit of the Rochester (Minn.) State Hospital were selected for study on the basis of diagnosis and age (65 years or more) at the time of onset of illness. Clinical diagnostic categories included chronic brain syndrome associated with senile brain disease or with cerebral arteriosclerosis. Eighty-four patients completed at least one 6-week medication period. No statistically significant differences in beneficial effects were demonstrated when the changes induced by chlorpromazine, reserpine, or pentylenetetrazol were compared with the effects of a placebo. In isolated instances of drug therapy, improvement was observed to a degree not seen in the group of patients receiving a placebo. These isolated cases were fairly evenly distributed among the groups receiving the drugs under study. An initial improvement during the first 6 weeks of drug therapy observed in 8 patients was followed by a regression to control levels when drug therapy was continued for an additional 6 weeks. Therefore, initial favorable responses must be viewed with caution.

Patients with the least organic damage seemed to respond better than those with advanced deterioration to treatment with tranquilizers. A tendency to lower the level of functioning in many patients was observed with each of the medications, as compared with spontaneous deterioration observed in the group given a placebo. This tendency was statistically significant in the patients who received chlorpromazine, while the trend was not statistically significant for patients treated with reserpine or pentylenetetrazol. Undesirable side-effects were most prevalent in the patients who received chlorpromazine. In general, it may be concluded that the use of chlorpromazine, reserpine, and pentylenetetrazol will not effect any significant improvement in senile patients found in state hospitals.

GYNECOLOGY & OBSTETRICS

Mustard Chemotherapy in Ovarian Carcinoma. E. V. Coonrad and R. W. Rundles. Ann. Int. Med. 50:1449-1461 (June) 1959 [Lancaster, Pa.].

The authors report on 38 female patients, between the ages of 14 and 67 years, with carcinoma of the ovaries, who were treated with the alkylating agents, nitrogen mustard, triethylene melamine (TEM), triethylene thiophosphoramide (Thio-TEPA), and chlorambucil, at the Duke Hospital in Durham, N. C., during the last 6 years. The results of chemotherapy were excellent in 4 patients, good in 7, and fair in 6. Seventeen of the 38 patients thus showed favorable responses, lasting from 4 months to over 6 years. In 15 patients (40%) of the series, there was no evidence of antitumor effect of the drugs, and the response to chemotherapy could not be evaluated in the remaining 6 patients. For maximal and satisfactory suppression of the growth of carcinoma of the ovary with the mustard compounds, continuous and aggressive therapy was almost invariably necessary.

For sustained therapy the orally absorbed compounds, TEM and chlorambucil, have been most practical. The safe and effective dose of TEM varied considerably from patient to patient, and many have found it difficult to use. Chlorambucil was more uniform and predictable in dose, could be given without alkali, and produced singularly few side-reactions. It seemed to be as effective as TEM. The initial dose of chlorambucil was 10 to 12 mg. daily, and the average maintenance dose was 4 to 6 mg. daily, or as required to maintain a mild leukopenia indefinitely. If severe leukopenia or thrombocytopenia occurred, chemotherapy was suspended temporarily. Marrow function ordinarily improved within a few days when it was depressed by chlorambucil. In several patients, tumor growth recurred quickly when reduction or suspension of chemotherapy was made necessary by bone marrow depression. Patients who had previously been given intensive irradiation therapy tolerated less chemotherapy than others, and accordingly they were benefited less at a late stage in their disease. The response of ovarian tumors to the mustard chemotherapy showed no definite correlation with their pathological features. Three of the 4 patients who had excellent responses had well-differentiated papillary cystadenocarcinomas. In each of the other group of patients with good, fair, or no response, the pathological findings ranged from well-differentiated cystadenocarcinomas to undifferentiated carcinomas.

The degree of therapeutic success observed with the mustard compounds should encourage further investigation of the effect of different types of alkylating agents on a large scale in patients with ovarian carcinoma. The intravascular route of administration, the infiltration of alkylating agents into local areas of tissue involvement, and combinations of surgery and chemotherapy, possibly at "second look" procedures in those with occult disease, should all be considered. Progress can be facilitated also by designing more conclusive studies of the value of supervoltage irradiation, and by comparing the effects of intracavitary isotope therapy with chemotherapy.

Hyperthyroidism and Pregnancy. W. F. Becker and P. G. Sudduth. Ann. Surg. 149:867-874 (June) 1959 [Philadelphia].

There were 30 thyrotoxic women among 152,084 pregnant patients observed at the Charity Hospital of Louisiana, in New Orleans, during the 16-year period, 1943-1958. Twenty-seven patients were multiparas, and 3 were primiparas. Eighteen of the 30 patients experienced the onset of thyrotoxic symptoms during pregnancy—12 during the first trimester, 1 in the second trimester, and 5 in the third trimester. Symptoms antedated the pregnancy in 12 patients. Twenty patients had toxic diffuse goiter (5 of them recurrent), and 10 had toxic nodular goiter. The thyrotoxicosis was considered to be mild in 8 cases, moderate in 17, and severe in 5. Only 8 thyroidectomies were performed during pregnancy—5 during the first trimester and 3 during the second trimester. Preoperative control of the hyperthyroidism was accomplished with propylthiouracil and Lugol's solution in 7 cases, and iodine and sedation in 1. Thyroidectomy had no demonstrable adverse effect upon these 8 pregnancies, 7 of which resulted in normal infants. In one patient, who had been operated on during the first trimester, a severe toxemia of pregnancy developed during the third trimester, and a term stillbirth resulted.

Twenty of the 22 patients who were not operated on during pregnancy were managed by the use of antithyroid drugs alone, and 2 received only iodine and sedation. Six of the 22 patients had thyroidectomy relatively soon after delivery. Of the remaining 16, 4 are presently awaiting thyroidectomy, 5 refused operation and are being treated with propylthiouracil, 4 apparently had drug-induced remissions of their thyrotoxicosis, and 3 were lost to follow-up. In the group of 22 patients treated without operation, 3 abortions occurred prior to institution of therapy but after thyrotoxicosis had become manifest. While receiving propylthiouracil, 3 patients aborted and 2 had term stillbirths. Abnormalities observed in the 14 infants born alive to mothers whose hyperthyroidism had been treated by antithyroid drugs alone included a small goiter which subsided without treatment, a persistent goiter in a cretin, and a huge hyperplastic thyroid which produced tracheal compression and death a few minutes after birth. A total of 42 pregnancies occurred in 30 patients during thyrotoxicosis. Thirty-three living babies were produced; 32 survived, and 31 have developed normally.

At the Charity Hospital in New Orleans approximately one pregnancy in 5,000 is complicated by hyperthyroidism. This is a much lower incidence than the average figure of one in 500 recorded in the literature. Early recognition and prompt control of thyrotoxicosis will reduce whatever influence it may have on the incidence of such complications of pregnancy as abortion, stillbirth, premature delivery, and toxemia. Hyperthyroidism per se probably does not exert a deleterious effect upon the fetus. Administration of radioiodine (I^{131}) is contraindicated during pregnancy, because it crosses the placental barrier and may destroy the fetal thyroid. The thiourea derivatives also traverse the placenta and are capable of exerting harmful effects upon the fetal thyroid; and their long-term use should be avoided. Most pregnant patients with hyperthyroidism are best treated by subtotal thyroidectomy after rapid preparation with antithyroid drugs and/or iodine. Hypothyroidism is a threat to both mother and fetus, and its induction by excessive dosage of antithyroid drugs is to be avoided. It is important to anticipate and appropriately treat the transient hypothyroidism which often follows thyroidectomy.

Teratomatous Ovarian Chorioepithelioma in a 7-Year-Old Girl. P. Torres. Rev. gynec. e obst. 104: 385-406 (May) 1959 (In Portuguese) [Rio de Janeiro].

Chorioepithelioma is still considered a peculiar tumor because of its anatomicopathological characteristics and its rarity. The author reports a case of ovarian teratomatous chorioepithelioma in a 7-year-old girl who was admitted to the Charity Hospital of Juiz de Fora, state of Minas Gerais, Brazil. For the 3 months prior to admission, the patient had shown sudden acceleration of physical development, enlarged genitals, and enlarged, tender abdomen. In the lower abdominal portion there was a tumor-like mass; its size corresponded to a 5-month pregnancy. The girl's mother strongly denied the possibility of the patient's having had sexual intercourse. The diagnosis of chorioepithelioma was made with the aid of laboratory tests (including Mainini and Frank-Salmon reactions, urinary hormone determination, and exfoliative cytology), radiologic findings, and general physical examination. At surgical intervention a large tumor-like mass was found, involving the ovaries and the tubes and continuing onto the external uterine surface. There were smaller tumors in the parietal peritoneum and in the lower intestinal loops. The microscopic examination of the removed tumor confirmed the diagnosis of chorioepithelioma. The patient died 27 days after the operation of peritonitis, probably due to a tear in an intestinal loop.

Volvulus Associated with Pregnancy: A Review and a Report of 3 Cases. G. D. Malkasian, Jr., J. S. Welch and G. A. Hallenbeck. Am. J. Obst. & Gynec. 78:112-124 (July) 1959 [St. Louis].

The authors reviewed 43 cases of volvulus during pregnancy collected from the literature. Three cases are presented from the records of the Mayo Clinic and are described in detail. Among the 43 patients studied, volvulus occurred more often in primiparous than in multiparous patients. Many of the patients had a history of previous episodes of colicky abdominal pain, vomiting, and absence of passage of feces or flatus. The range of duration of the acute symptoms, from onset to operation or death, was from half a day to 14 days. The delay in definitive treatment has accounted for the exceedingly high mortality rate in the past. There were 12 maternal deaths and 14 fetal deaths in this series. A higher fetal and maternal mortality rate occurred among those patients in whom volvulus involved the small intestine. Among patients in whom volvulus occurred in the sigmoid colon, the fetal and the maternal mortality rates were somewhat lower than they were among those in whom volvulus occurred in segments of the colon other than the sigmoid. Two cases of volvulus of the cecum and the terminal portion of the ileum resulted in maternal and fetal death.

Six of the 43 patients died before treatment could be instituted; the remaining 37 patients were treated surgically. In 16 patients the treatment consisted of a simple untwisting of the twisted part, while the procedures used in the other 21 patients varied, but frequently involved decompression of the intestine. Active surgical treatment for volvulus during pregnancy is recommended, particularly in patients in whom signs of intestinal strangulation are present or in whom relief could not be achieved by conservative medical measures over a short period. Decompression of a sigmoid volvulus with a long rectal tube may be justified under certain circumstances, as has been demonstrated in one of the 3 cases described. This is the only recorded case in which volvulus in pregnancy was relieved by colonic intubation and without surgical intervention; however, subsequent definitive surgical treatment is usually necessary.

PEDIATRICS

Hereditary Enamel Dysplasia. A. P. Chaudhry, O. N. Johnson, D. F. Mitchell and others. J. Pediat. 54:776-785 (June) 1959 [St. Louis].

A brief review of the literature on hereditary enamel dysplasia and a detailed clinical and roentgenologic examination of the teeth in 10 members of 5 families with a known pedigree has led the authors to form the following conclusions: Enamel dysplasia is an hereditary disturbance which appears to be transmitted as a simple dominant Mendelian character without apparent sex-linkage. Similar cases which lacked an hereditary background were not included in this study; they were considered idiopathic in origin. Hereditary enamel dysplasia is primarily an ectodermal disturbance of the tooth germ, the mesodermal components being normal. Secondarily, the exposed dentine may become sclerotic. No case of complete enamel agenesis was found in this series. In some cases there was a small quantity of enamel which broke off soon after eruption of the teeth. There was a gradation in the degree of disturbance. The enamel in newly erupted teeth was white, dull, and chalky, but it soon became pigmented due to imbibition of exogenous pigments. Both dentitions were affected in all the patients of this series. Other abnormalities, namely, tooth resorption, missing teeth, localized delayed eruption, and anterior open bite, were noted in some cases but were not present consistently. From the point of view of treatment, the degree of involvement is of importance. In mild cases, crowning the teeth has been successful, while in severe cases, especially those with severe malocclusion, extraction of teeth and construction of dentures to improve esthetics and function have been indicated.

QUESTIONS AND ANSWERS

Rh FACTORS

To the Editor:—*The theory of triple inheritance of the Rh factors is presented by Race and Sanger in the 1958 edition of their book "Blood Groups in Man" (pp. 142-145). How does one fit into their scheme of triple inheritance the newly discovered factors* hr *(f),* rh$_1$ *(Ce),* hr^V, *and* Rh^A, Rh^B, *and* Rh^C?

Malcolm A. Hyman, M.D., Bayonne, N. J.

Answer.—The Race and Sanger book is confusing as regards the position of the blood factors hr (f), rh$_1$ (Ce), hr^V (V), and Rh^A, Rh^B, Rh^C, and Rh^D in the Fisher-Race scheme of triple inheritance. According to this book, additional linked genes have been invoked to account for factors hr (f) and hr^V (V). For example, type rh now becomes cdefv/cdefv instead of cde/cde. This disregards blood factor rh$_1$ (Ce) (Rosenfield and Haber: Rh Blood Factor, rh$_1$ (Ce), and Its Relationship to hr (ce), *Am. J. Human Genet.* 10:474 [Dec.] 1958), and Rosenfield's suggestion that factor hr might be the result of a position effect (ce) rather than an additional linked gene f. No attempt has been made to incorporate blood factors Rh^A, Rh^B, Rh^C, and Rh^D into the triple inheritance scheme, except to remark that certain D persons can produce anti-D.

The real problem is not one of genetics but of serology. The confusion has been caused by the lack of distinction between agglutinogens and their serologic attributes, the blood factors, and by use of the C-D-E notations. The C-D-E symbols assume a simple one-to-one correspondence between gene, agglutinogen, and antibody, but Landsteiner's work proves that every agglutinogen has multiple different specific antibodies, each with its corresponding blood factor. For example, gene R^1 determines the agglutinogen Rh$_1$ which has the serologic attributes Rh$_0$, Rh^A, Rh^B, Rh^C, Rh^D, rh$'$, rh$_1$, rh^G, and hr$''$, a total of nine blood factors at the present stage of knowledge, while gene r determines agglutinogen rh having the serologic attributes rh^G, hr$'$, hr$''$, and hr, a total of only four blood factors; therefore the concept of triple inheritance bears no relation at all to the laboratory observations (Wiener: Blood-Group Nomenclature, *Science* 128:849 [Oct. 10] 1958).

Other misconceptions are implied by the C-D-E notations. One is that there are only three Rh blood factors, C, D, and E, with three contrasting Hr factors, c, d, and e; another is that by testing for these six factors a patient's Rh-Hr genotype can be determined. The Committee on Medicolegal Problems of the American Medical Association has prepared a report which recommends that "unless and until some other convention can be agreed on, the original Rh-Hr notations be kept as the standard and sole nomenclature for preparing approved medicolegal reports on Rh-Hr types" (Wiener and others: Medicolegal Applications of Blood-Grouping Tests, *J. A. M. A.* 161:233-239 [May 19] 1956; 164:2036-2044 [Aug. 31] 1957). This report and the references should be consulted. Instead, this report has been repudiated by some workers (Allen and others: Blood-Group Nomenclature, Letters, *Science* 127:1255 [May 23] 1958) who intend to continue using the C-D-E notations.

In summary, the newly discovered Rh-Hr factors (named by the correspondent) cannot be fitted into the Fisher-Race hypothesis of triple inheritance because the hypothesis is fallacious.

SPECIAL OLEOMARGARINES

To the Editor:—*Please give information as to the best high-grade anticholesterol oleomargarine on the market, with the names of manufacturers of those especially high in nonsaturated fatty acids and low in saturated fatty acids. Low sodium content also is preferred.*

C. W. Henney, M.D., Portage, Wis.

Answer.—The Pitman-Moore Company, Indianapolis, has a margarine made from corn oil containing 34 Gm. of linoleic acid per 100 Gm. It also contains 15,000 U. S. P. units of vitamin A per pound and 2,000 U. S. P. units of vitamin D per pound. It meets the standards of the Food and Drug Administration for margarine. It can be purchased only through pharmacies. Standard Brands, Inc., markets a margarine made from corn oil under the name of Fleishmann supreme margarine. It is understood that this product is available in groceries. Available information indicates that this product has only 8 to 10% linoleic acid. It is suggested that the manufacturers be written regarding the sodium content of these products.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

WASHINGTON NEWS

Warnings on Social Security Health Plan . .
Research on Milk Radioactivity . .
Retirement Bill for Self-Employed . .
International Health Developments . .

SOCIAL SECURITY BILL PROSPECTS

The U. S. Chamber of Commerce warned that passage of the bill to provide health care under the Social Security system "would be a major breakthrough into the welfare state." Pointing out that the bill would cover persons over 65 years of age, the Chamber said in its weekly report to members, "The pressures for doing as much for self-supporting persons under 65 cannot long be withstood."

"The problems of the aging are community problems, and, to a large extent, businessmen's problems, because of their economic as well as social and political implications," said the report. "If solutions do not come from the communities they will surely be imposed from Washington."

The Chamber said "there will be a powerful attempt" made to enact the measure next year. If successful it "probably would lead to a compulsory federal program providing complete medical care for everyone. . . . Once a program of this kind got started, there would be no stopping it.

"Orderly solutions of these problems can have much to do with the welfare and the mood of our aging people, with our national solvency, and with the very character of our form of government, because we are going to be moving along the brink of the welfare state."

The disputed measure, whose chief sponsor is Rep. Aimé Forand (D., R. I.), would provide, through higher Social Security taxes, surgical and hospital care for Social Security beneficiaries aged 65 and older. The House Ways and Means Committee last session held a week of hearings on the bill but took no action. Spokesmen for the administration, the American Medical Association, state and local medical societies, and many allied organizations urged the lawmakers to oppose the measure. The AFL-CIO was the chief advocate.

Two key members of the powerful Ways and Means Committee recently told physicians that a strong drive will be made for the legislation at the next session of Congress. They were Rep. Richard M. Simpson (R., Pa.), top-ranking Republican on the committee, and Rep. Thomas B. Curtis (R., Mo.).

Curtis said that unless a strong counter-drive is started, "I regretfully predict that legislation . . . along these lines will probably be enacted at the next session of Congress."

"All of the increased tax," he said in a statement placed in the *Congressional Record,* "will, of course, be reflected rather quickly in the cost-of-living index."

Representative Simpson, in another statement for the *Congressional Record,* had this to say: "I would observe that present-day conditions demand that the medical practitioner be knowledgeable on political considerations. Such factors as the numerous social programs being advocated which affect the practice of medicine, the increasing importance of the economics of medicine, the 30-year trend toward greater reliance on government paternalism in solving human problems, and the expansion of governmental research and health regulatory activities make it imperative that every doctor keep informed on legislative issues before the Congress."

"It is equally important," he continued, "that doctors fulfill their citizenship duty by standing for principles of government in which they believe as Americans and by supporting the candidates who stand for those principles."

He urged physicians "to become patriotic political forces so that our communities, states, and nation can benefit from their informed viewpoint."

As for the Forand bill, "It is important that those who do not believe that H. R. 4700 [the Forand bill] represents a workable solution to medical care needs for the aged should develop appropriate alternatives," said Simpson.

"It will, of course, be my purpose next year to continue my endeavors in cooperation with the medical profession to guard our citizens and the nation against the disastrous consequences of compulsory national health insurance."

GOVERNMENT STUDIES WAYS OF REMOVING RADIOACTIVITY

Three federal agencies launched a joint research program to find a commercially feasible process for removing radioactive strontium (Sr^{90}) from milk. In announcing the project the Agriculture Department emphasized that "The levels of radioactive fall-out from past nuclear testing do not justify action to decontaminate milk supplies." Rather, the agency said, "The research is designed to provide practical answers to problems that might arise in the future."

In addition to the Agriculture Department, the Atomic Energy Commission and the U. S. Public Health Service are taking part in the research program, which will cost $200,000 a year. The research will be done at a pilot dairy plant at the Agriculture Research Center at Beltsville, Md.

(Continued on next page)

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References: 1. Ellison, R. R. and Burchenal, J. H.: J. Chronic Dis. 6:421 (Oct.) 1957. 2. Ultmann, J. E., Hyman, G. A., and Gellhorn, A.: J.A.M.A. 162:178 (Sept. 15) 1956. 3. Bethell, F. H.: J. Chronic Dis. 6:403 (Oct.) 1957.

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Strontium-90, a by-product of nuclear explosions, can cause leukemia and bone cancer if it is accumulated in sufficient quantities. The product gets into milk from the plants that cows eat. For more than a year the PHS has been conducting nationwide samplings of milk to determine whether the radioactivity level is safe.

Previous laboratory tests conducted by the AEC and British and Canadian scientists have demonstrated that it is possible on a laboratory scale to remove strontium-90 from milk through the use of chemicals known as ion-exchange resins. These resins duplicate the manner in which soil particles absorb most strontium-90. Leaves absorb from the air most of the radioactivity found in plants.

In the PHS's latest report on milk samplings, the count decreased in 9 of 11 testing stations during the month of July. Only Fargo, N. D., and St. Louis, Mo., showed increases, with the Fargo count of 22.1 $\mu\mu c$ being highest of all stations. However, the level was far below the 80 $\mu\mu c$ of lifetime exposure considered to be the maximum permissible concentration of stronium-90 for human beings. The levels have generally been dropping during the current nuclear test cessation by the United States and Russia.

McCORMACK URGES PASSAGE OF KEOGH-SIMPSON BILL

House Democratic Leader John McCormack (D., Mass.) urged the Senate to act favorably next year on the House-passed measure providing tax deferrals for self-employed persons who set money aside for retirement. In a lengthy summing up of the record of the first session of the 86th Congress, McCormack said the bill is "meritorious legislation and should be enacted into law next year."

Approved by an overwhelming voice vote in the House last winter, the measure was not acted on by the Senate Finance Committee. However, prospects for Senate action next year appear good. The bill, endorsed by many groups of self-employed persons, is intended to give the self-employed, such as physicians and lawyers, similar tax treatment on money saved for retirement as salaried persons now are able to receive.

HUMPHREY PREDICTS NEW HEALTH BILLS

Sen. Hubert H. Humphrey (D., Minn.), chairman of a Senate government operations subcommittee on international health, said "important" legislation in the field will be "formulated and advanced" at the next session of Congress.

The lawmaker did not specify what measures would be considered but said they would be based on his subcommittee's year-long study of international health. In a statement in the *Congressional Record* the senator said he had received many commendations for the subcommittee's work "from the American public in general and from the medical profession specifically."

The subcommittee has published five pamphlets to date, including documents on heart and cancer research around the world, and plans to issue five more before the end of the year, Humphrey noted.

Among other international health bills still pending in Congress are the Senate-passed measure calling for a 50-million-dollar annual program for international medical research and proposals for a "Great White Fleet" of U. S. naval vessels to tour world trouble spots of disease and famine.

PERSONNEL

Five new members were appointed to serve on the Veterans Administration's special medical advisory group of outstanding specialists in medicine and allied scientific professions. The group meets quarterly to advise the VA on its medical program. The new members are Drs. Jasper L. Callaway, professor of dermatology and syphilology at Duke University; Arthur G. DeVoe, professor and chairman of the department of ophthalmology of New York University Post-Graduate Medical School and director of eye service at Columbia University Hospital; Raymond J. Nagle, dean of the College of Dentistry of New York University; Ralph M. Tovell, director of the department of anesthesiology of the Hartford (Conn.) Hospital; and O. Currier McEwen, associate professor of medicine at New York University.

Dr. Marc J. Musser, director of professional services at the Houston, Texas, Veterans Administration hospital was named director of medical research for the VA in Washington, D. C.

Dr. Donald Henry Barron, professor of physiology at Yale University School of Medicine, has been appointed to serve a three-year term on the embryology and development training committee of the National Institutes of Health, U. S. Public Health Service.

Sen. Lister Hill (D., Ala.), chairman of Senate labor and appropriations subcommittees on Health, and Rep. John Fogarty (D., R. I.), chairman of the House appropriations subcommittee on Health, were awarded Albert Lasker awards for "extraordinary public service to the nation's health." The lawmakers were cited for their support of medical research activities. Winners of other Lasker awards included Maurice Pate, executive director, United Nations Children's Fund, New York, and Drs. John Holmes Dingle, Western Reserve University Medical School, Cleveland; Albert Coons, Harvard University Medical School, Cambridge, Mass.; Jules Freund, National Institutes of Health, Bethesda, Md.; and Gilbert Dalldorf, the National Foundation, New York.

MISCELLANY

Child Health Day will be observed on a new day next year—the first Monday in October—under a joint congressional resolution signed by President Eisenhower. The change was made to link Child Health Day more closely to Universal Children's Day, which many nations observe on the October date. In addition, the previous date of May 1 was the same as that of Loyalty Day.

Four research centers are studying glaucoma screening and diagnostic techniques through research grants awarded by the National Institutes of Health. Scientists at Johns Hopkins University, University of Iowa, Washington University, and University of California are investigating how to define glaucoma in the earliest clinical stages, methods of detecting glaucoma earlier than present diagnostic methods permit, and the relation of measurable eye abnormalities such as increased ocular tension to the disease, and they are evaluating the efficiency of present diagnostic techniques.

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References: 1. Unugur, A., Schulman, E., and Dameshek, W.: New England J. Med. 256:727 (Apr. 18) 1957. 2. Burchenal, J. H., Karnofsky, D. A., Murphy, M. L., Ellison, R. R., Sykes, M. P., Tan, C. T. C., Mermann, A. C., Yuceoglu, M., and Rhoads, C. P.: Am. J. M. Sc. 228:371 (Oct.) 1954. 3. Altman, S. J., Haut, A., Cartwright, G. E., and Wintrobe, M. M.: Cancer 9:512 (May-June) 1956.

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MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. F. J. L. Blasingame, 535 North Dearborn St., Chicago 10, Executive Vice-President.

1959 Clinical Meeting, Dallas, Texas, Dec. 1-4.
1960 Annual Meeting, Miami Beach, Fla., June 13-17.
1960 Clinical Meeting, Washington, D. C., Nov. 29-Dec. 2.
1961 Annual Meeting, New York City, June 26-30.
1961 Clinical Meeting, Denver, Nov. 28-Dec. 1.
1962 Annual Meeting, Chicago, June.

AMERICAN

1959

October

Academy of Psychosomatic Medicine, Sheraton-Cleveland Hotel, Cleveland, Oct. 15-17. For information write: Dr. Bertram B. Moss, Suite 1035, 55 E. Washington St., Chicago 2, Secretary.

American Association of Medical Assistants, Benjamin Franklin Hotel, Philadelphia, Oct. 16-18. Mrs. Stella Thurnau, 510 N. Dearborn, Room 924, Chicago 10, Executive Secretary.

American College of Cardiology, Benjamin Franklin Hotel, Philadelphia, Oct. 23-25. Dr. Philip Reichert, Empire State Bldg., New York 1, Executive Director.

American College of Chest Physicians, 25th Anniversary Homecoming Meeting, Albuquerque, N. M., Oct. 14-17. Mr. *Murray Kornfeld*, 112 E. Chestnut St., Chicago 11, Executive Director.

American College of Preventive Medicine, Hotel Ambassador, Atlantic City, N. J., *Oct. 21-22*. Dr. John J. Wright, P. O. Box 1267, Chapel Hill, N. C., Secretary-Treasurer.

American Heart Association, Trade and Convention Center, Philadelphia, Oct. 23-27. Mr. William F. McGlone, 44 E. 23rd St., New York 10, Secretary.

American *Psychiatric Association*, *Detroit Divisional Meeting*, Hotel Statler, Detroit, Oct. 29-31. Dr. Benjamin Jeffries, 16321 Mack Ave., Detroit 24, Co-Chairman, Planning Committee.

American Public Health Association, Convention Hall, Atlantic City, N. J., Oct. 19-23. Dr. Berwyn F. Mattison, 1790 Broadway, New York 19, N. Y., Executive Director.

American School Health Association, Claridge Hotel, Atlantic City, N. J., Oct. 18-23. Dr. A. O. DeWeese, 515 E. Main St., Kent, Ohio, *Executive Secretary*.

American Society of Facial Plastic Surgery, Chicago, Oct. 15-17. Dr. Samuel M. Bloom, 123 E. 83rd St., New York 28, Secretary.

American Society of Plastic and Reconstructive Surgery, Hotel Fountainebleau, Miami Beach, Fla., Oct. 18-23. Dr. Thomas Ray Broadbent, 508 E. South Temple, Salt Lake City, General Secretary.

American Society of Tropical Medicine and Hygiene, Claypool Hotel, Indianapolis, Oct. 28-31. Dr. Rolla B. Hill, 3575 St. Gaudens Road, Miami 33, Fla., Executive Secretary.

Arizona Academy of General Practice, Hotel Valley Ho, Scottsdale, Oct. 15-17. Dr. Arthur V. Dudley Jr., 1524 N. Norton, Tucson, Ariz., Convention Chairman.

Association of Life Insurance Medical Directors of America, Hotel Statler Hilton, New York City, Oct. 21-23. Dr. Royal S. Schaaf, Prudential Insurance Co., P. O. Box 594, Newark 1, N. J., Secretary.

Central Neuropsychiatric Association, Hotel Roosevelt, New Orleans, Oct. 16-17. Dr. Ralph M. Patterson, Columbus *Psychiatric Institute*, 473 W. 12th Ave., Columbus 10, Ohio.

Congress of Neurological Surgeons, Americana Hotel, Miami, Fla., Oct. 28-31. Dr. Richard L. DeSaussure, Suite 101 B, 20 S. Dudley St., Memphis, Tenn., Secretary-Treasurer.

National Rehabilitation Association, Statler-Hilton Hotel, Boston, Oct. 26-28. Mr. Edward D. Callahan, 14 Court Square, Boston 8, Conference Chairman.

National Safety *Congress and Exposition*, *Chicago, Oct. 19-23*. For information write: National Safety Council, 425 N. Michigan, Chicago 11,

New England Society of Allergy, Longwood Towers, Boston, Oct. 28. For information, write NESA, 300 Longwood Ave., Boston.

Osler Society of St. Louis City Hospital, Bellevue-Stratford and Jefferson Medical College, Philadelphia, Oct. 26-27. Dr. Jack Barrow, 110 S. Central, St. Louis 5, Secretary-Treasurer.

Pacific Coast Obstetrical & Gynecological Society, St. Francis Hotel, San Francisco, Oct. 21-24. *Dr. Donald W. de Carle, 2000 Van Ness* Ave., San Francisco, Chairman.

Pacific Northwest Society of Pathologists (Fall Meeting), Gearhart, Ore., Oct. 15-17. Dr. Nelson R. Niles, U. of Oregon Med. School, Portland 1, Ore., Secretary.

Pennsylvania, Medical Society of the State of, Penn-Sheraton Hotel, Pittsburgh, Oct. 18-23. Mr. Lester H. Perry, 230 State St., Harrisburg, Pa., Executive Director.

Society of *Pelvic Surgeons*, Medical College of Virginia, Richmond, Va., Oct. 22-24. Dr. Laman A. Gray, 408 Heyburn Bldg., Louisville, 2, Ky., Secretary.

Western Orthopedic Association, *Brown Palace Hotel, Denver*, Oct. 18-22. Vi Mathiesen, 354 21st St., Oakland 12, Calif., Executive Secretary.

November

Academy of Medicine of Cleveland Seminar on Recent Advances in Diagnosis and Therapy of Malignant Disease, Cleveland, Nov. 18-19. Dr. H. S. Van Ordstrand, 2009 Adelbert Rd., Cleveland 6, Chairman.

American Academy for Cerebral Palsy, Statler Hilton Hotel, Los Angeles, Nov. 30-Dec. 2. Dr. Glidden L. Brooks, Brown University, *Providence 12, R. I., Secretary*.

American Association of Blood Banks, Edgewater Beach Hotel, Chicago, Nov. 4-7. Dr. John B. Alsever, Southwest Blood Banks, 1211 W. Washington St., Phoenix, Ariz., Secretary.

American Clinical and Climatological Association, The Homestead, *Hot Springs, Va., Nov. 2-4.* Dr. F. *Tremaint Billings*, 420 Medical Arts Bldg., Nashville, Tenn., *Secretary*.

American College of Chest Physicians, Dallas, Texas, Nov. 29-30. Mr. Murray Kornfeld, 112 E. Chestnut St., Chicago 11, Executive Secretary.

American Fracture Association, Roosevelt Hotel, New Orleans, Nov. 1-5. *Dr.* H. W. Wellmerling, 610 Griesheim Bldg., Bloomington, Ill., Executive Secretary.

American Medical Women's Association, Arlington Hotel, Hot Springs, Ark., Nov. 12-15. Mrs. Lillian T. Majally, 1790 Broadway, New York 19, Executive Secretary.

Association of American Medical Colleges, Edgewater Beach Hotel, Chicago, Nov. 2-4. Dr. Ward *Darley*, 2530 Ridge Ave., Evanston, Ill., Executive Director.

Association of Military Surgeons of the United States, Mayflower Hotel, Washington, D. C., Nov. 8-11. Lt. Col. George M. Beam, AUS, Ret., Suite 718, New Medical Bldg., *1726 Eye St.*, N. W., Washington 6, D. C., Executive Secretary.

Central Society for Clinical Research, Drake Hotel, Chicago, Nov. 6-7. Dr. Austin S. Weisberger, 2065 Adelbert Rd., Cleveland 6, Secretary.

Chicago Heart Association, *Symposium on Cerebral Vascular Diseases*, Knickerbocker *Hotel, Chicago, Nov. 7. Dr. C. Bruce Taylor*, c/o Chicago Heart Assn., 22 W. Madison, Chicago 2, Chairman.

Conference on Electrical Techniques in Medicine and Biology, Sheraton Hotel, Philadelphia, Nov. 10-12. Dr. Herman P. Schwan, Moore School of Electrical Engineering, University of Pennsylvania, Philadelphia, Chairman.

District of Columbia, Medical Society of, Statler-Hilton Hotel, Washington, D. C., Nov. Mr. Theodore Wiprud, 1718 M Street, N.W., Washington 6, D. C.

Gastroenterology Research Group, Drake Hotel, Chicago, Nov. 6. For information write Dr. Charles F. Code, Mayo Clinic, Rochester, Minn.

Gerontological Society, Inc., Statler Hotel, Detroit, Nov. 12-14. Mrs. Marjorie Adler, 660 S. Kingshighway Blvd., St. Louis 10, Administrative Secretary.

Illinois Academy of General Practice, Morrison *Hotel*, Chicago, Ill. Nov. 9-12. Dr. H. Marchmont-Robinson, 14 E. Jackson Blvd., Chicago 4, Executive Secretary.

International College of Surgeons, Second Western Regional Meeting, Stardust Hotel, Las Vegas, Nev., Nov. 22-24. Dr. F. M. Turnbull Jr., 1930 Wilshire Blvd., Los Angeles 57, Secretary-Treasurer.

Inter-Society Cytology Council, Statler-Hilton Hotel, Detroit, Nov. 19-21. Dr. Paul A. Younge, 1101 Beacon St., *Brookline 46*, Mass. Secretary-Treasurer.

Interstate Postgraduate Medical Association of North America, The Palmer House, Chicago, Nov. 2-5. Mr. Roy T. Ragatz, Box 1109 Madison 1, Wis., Executive Secretary.

Michigan Academy of General Practice, 13th Annual Fall Postgraduate Clinic, Sheraton-Cadillac Hotel, Detroit, Nov. 11-12. Dr. F. P. Rhoades, 970 Maccabees Building, Detroit 2, Convention Manager.

National Proctologic Association, Chicago, Nov. *Dr. George E.* Mueller, 59 E. Madison, Chicago 2, Secretary.

National *Society for Crippled* Children and Adults, Palmer House, Chicago, Nov. 29-Dec. 2. Dr. Dean W. Roberts, 2023 W. Ogden Ave., Chicago 12, Executive Director.

Omaha Mid-West Clinical Society, Civic Auditorium, Omaha, Nov. 2-5. Mrs. Reta M. Crowell, 1031 Medical Arts Bldg., Omaha 2, Executive Secretary.

Puerto Rico Medical Association, Santurce, Nov. 24-28. Mr. J. A. Sanchez, Box 9111, Santurce 29, Puerto Rico, Executive Secretary.

Radiological Society of North America, Inc., Palmer House, Chicago, Nov. 15-20. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary-Treasurer.

San Diego Academy of General Practice, Hotel *Riviera*, Las Vegas, Nev., Nov. 12-14. For information write: Dr. Harold Peterson, 597 El Cajon Blvd., San Diego 15, Calif.

Society for the Scientific Study of Sex, Barbizon *Plaza Hotel*, New York City, Nov. 7. Mr. Robert V. Sherwin, Suite 704, 1 E. 42nd St. New York 17, *Executive Secretary*.

Southern Medical Association, Atlanta, Nov. 16-19. Mr. V. O. Foster, 2601 Highland Ave., Birmingham 5, Ala., Executive Secretary-Treasurer.

Southwestern Medical Association, Roswell, N. M., Nov. 5-7. Dr. Russell L. Deter, 1501 Arizona St., El Paso, Texas, Secretary.

Western *Surgical Association*, The Broadmoor, Colorado Springs, Colo. Nov. 19-21. Dr. John T. Reynolds, 612 N. Michigan Ave., *Chicago 11*, Secretary.

December

American Academy of Dermatology and Syphilology, Palmer House, Chicago, Dec. 5-10. Dr. Robert R. Kierland, First National Bank Bldg., Rochester, Minn., Secretary-Treasurer.

American Rheumatism Association, Henry Ford Hospital, Detroit, Michigan, Dec. 11. Gerard W. Speyer, 10 Columbus Circle, New York 19, Executive Secretary.

Association for Research in Nervous and Mental Disease, Inc., Hotel Roosevelt, New York City, Dec. 11-12. Dr. Rollo J. Masselink, 700 W. 168th St., New York 32, Secretary-Treasurer.

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STATUS OF FIELD TRIALS WITH AN ORALLY ADMINISTERED, LIVE ATTENUATED POLIOVIRUS VACCINE

Albert B. Sabin, M.D., Cincinnati

Between October, 1958, and early September, 1959, about 11 million children outside the United States received by mouth a vaccine prepared from strains of poliovirus that had been selected and studied in this country by the author. Preliminary studies had shown that the establishment of these strains in susceptible persons was neither associated with any distinct illness nor was it followed by detectable late manifestations in the nervous system. The spread of the three vaccine strains was comparable to that of the naturally occurring viruses. The presence of other viral intestinal infections sometimes suppressed the multiplication of the orally administered poliovirus vaccines. In the absence of interference, antibody was demonstrable within 7 to 10 days after infection. A large body of evidence now indicates that the live vaccine is safe for both the vaccinated children and the community.

LIVE, attenuated poliovirus vaccine differs from other live virus vaccines hitherto used in human preventive medicine in that not only does it produce a clinically unrecognized infection in those who swallow it but under appropriate conditions this infection can also spread to other persons. If the contacts are solidly immune as a result of natural infection, the virus does not multiply in them; if they are only partially immune, or nonimmune, or have immunity as a result of inoculations with Salk vaccine, the virus multiplies in their intestinal tract and produces immunity in those who had none or boosts any preexisting partial immunity. While the capacity for spread provides an excellent opportunity for achieving immunization of a population beyond the actual numbers vaccinated, it is essential that the spreading virus remain avirulent for human beings.

Extensive studies on small groups of human beings recently reached a stage at which the basic question of the safety of such a vaccine for those who receive it by direct feeding, as well as for those who may be immunized by contact infection, could be answered not by additional laboratory or monkey tests but only by field trials on a very large scale, as was recommended in 1957 by the expert committee on poliomyelitis of the World Health Organization.[1] It was also evident that definitive answers could be obtained only by field trials in countries with large, nonimmune populations in which the Salk vaccine was not being used on a sufficiently large scale to prevent a proper evalua-

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From the Children's Hospital Research Foundation, University of Cincinnati College of Medicine.
Read at the ninth International Congress of Pediatrics, Montreal, July 22, 1959.

tion of the safety of the live vaccine for the community as well as for the individual person. It was because of this scientific reason and also in order not to interfere with the maximum utilization of the already established Salk vaccine that no attempt was made to carry out large field trials in the United States.

Scientists in many different parts of the world undertook to carry out the studies which those in the United States, including myself, who developed the vaccine strains and carried out the basic studies were unable, for the reasons mentioned, to carry out. Between October, 1958, and early June, 1959, approximately 4,500,000 people, mostly children, in various republics of the U. S. S. R., in Czechoslovakia, in Singapore, and in Mexico received vaccine prepared from the strains that I had selected and studied in the United States. I have been informed by Prof. M. P. Chumakov of Moscow that up to July 15, 1959, approximately 6,374,000 persons will have been fed this vaccine in various parts of the U. S. S. R. More than 1 million children in Central and South America have been fed poliovirus vaccines containing strains developed by Koprowski and associates (now called the Lederle strains), and large numbers of children in Africa and Poland have been fed the type 1 "Chat" strain, which is derived from and is similar to the earlier Koprowski-Lederle type 1 virus. I should now like to review briefly some of the studies that led up to the large field trials and to indicate the lessons that have already been learned from those trials with which I am personally familiar.

At the end of 1956, after four years of extensive tests on many experimentally modified and naturally occurring attenuated strains of poliovirus which demonstrated distinct differences among the various strains, I selected from the progeny of single virus particles the strain of each of the three types which I regarded as most suitable for further tests on increasingly larger numbers of human beings.[2] With the cooperation of the Merck, Sharp & Dohme Research Laboratories about 25 liter lots of each of the three strains were prepared—amounts sufficient for trials on more than 2 million human beings. Portions of these large lots were then used for basic studies on small groups of human beings in the United States by myself,[3] Horstmann and associates,[4] Gelfand and associates,[5] and Koprowski (at the Wistar Institute, on the type 2 strain)[6]; in Holland by Verlinde and associates,[7] in Mexico by Ramos-Alvarez and Gomez,[8] in the U. S. S. R. by Smorodintsev and associates,[9] in England by Clarke and associates,[10] in Sweden by Wesslen, in Chile by Contreras and Scroggie, and in Japan by Kitaoka. The results of these three latter studies will be published in the near future.

Time does not permit a detailed review of all the results of these preliminary basic studies, but some of the important points need to be mentioned here in order to provide a background for understanding the issues and the problems that had to be resolved by the large field trials.

Illness Attributable to the Vaccine

In none of the preliminary studies, involving several thousand children and adults, was there any evidence that multiplication of the vaccine strains in susceptible persons was associated with any distinct illness. Because no group of children or adults observed over a period of weeks or months is ever free of some pharyngeal or alimentary disturbances, it is difficult to say that such mild disturbances never occur. However, careful studies by many observers failed to reveal any early or late manifestations referable to involvement of the nervous system.

Studies in the United States [11] and Sweden[12] have indicated that during the course of spontaneous immunization with the various naturally occurring strains of poliovirus, one may expect over the years one case of paralytic poliomyelitis for each 100 to 300 children who are converted from susceptibility to immunity. This rate has been estimated to be much higher for adults. Furthermore, since about 85% of all paralytic poliomyelitis over the years is caused by the type 1 virus, it is also evident and known that for the type 2 and type 3 viruses thousands of persons become inapparently infected in nature for each case of paralytic poliomyelitis caused by these types. It is also necessary to remember that these estimates do not apply to persons living under conditions of poor sanitation and hygiene, among whom the rate of inapparent infection and immunization is known to be much higher.

These estimates provide some basis for estimation of the numbers of susceptible persons who must be tested to permit an evaluation of the safety of a live, attenuated poliovirus vaccine. In countries with susceptible populations comparable to those in the United States and Sweden prior to the use of Salk vaccine, one would expect about 5,000 cases of paralytic poliomyelitis among 1 million susceptible children in whom a type 1 vaccine strain multiplied, if its virulence were comparable to the composite of the avirulent, mildly virulent, and highly virulent strains of type 1 virus that are known to occur in nature. Therefore, the absence of any such case clearly attributable to the vaccine, among 1 million or more susceptible persons, could be regarded as valid evidence of the safety of the vaccine.

Spread of the Vaccine Strains to Contacts

The accumulated information indicates that the spread of the vaccine strains is in most respects comparable to that of the naturally occurring viruses, in that it is mediated by fecal contamination, predominantly by small children in intimate association with susceptible persons at play or in the home. Conditions of poor sanitation and hygiene contribute to spread only if the infected child is surrounded by susceptible persons, but insofar as populations under such conditions have a high incidence of naturally acquired immunity, the chain of transmission is more readily broken. These findings have a special significance for the conduct and evaluation of large field trials.

For determining the extent of spread of the vaccine strains and evaluating the effects of such spread, populations having generally poor sanitation and hygiene are paradoxically less suitable than populations having better sanitation and hygiene for the following reasons: 1. At any one time 5 to 25% of the most susceptible child population is often already infected with naturally occurring polioviruses of varying degrees of virulence. 2. The incidence of naturally immune persons with resistant intestinal tracts is so high that only massive administration of the vaccine strains in the briefest possible period of time may have some chance of competing with the large numbers of naturally occurring polioviruses and other enteric viruses.

Alteration in Characteristics of Virus After Multiplication in the Intestinal Tract of Vaccinated Persons and Contacts

Whether the virus is substantially modified in the intestinal tract of vaccinated persons and contacts has naturally been a source of major concern in connection with live poliovirus vaccine and has been extensively studied by myself[3] and other investigators[13] who obtained strains from me. All are agreed that, under conditions which preclude infection with naturally occurring polioviruses, it is possible to demonstrate the presence of less attenuated virus in the stools of some vaccinated persons and contacts by inoculation into the central nervous system of monkeys. This is much less frequent and less marked with the type 1 and type 2 strains that I selected than with the type 3. In none of the studies has a virus fully neurovirulent for monkeys been recovered from the stools.

Furthermore, the less attenuated virus appears to constitute only a portion of the total poliovirus population in the intestinal tract. The major portion of the virus which is more highly attenuated, by virtue of numbers or other properties, has an advantage over the less attenuated virus in the human intestinal tract. The less attenuated virus, which usually appears later in the course of viral multiplication, at a time when the quantity of virus in the stool is smaller and is less likely to be transmitted naturally, as a rule disappears after more prolonged multiplication in the vaccinated person or contact. The monkey's nervous system, however, selects the smaller portion of the more neurotropic virus in a manner comparable to the selection of a few penicillin-resistant streptococci by a penicillin-containing culture medium.

The most extensive studies on this subject were carried out by Smorodintsev and his associates in Leningrad. They studied the neurovirulence of the excreted virus of each of the three types, after each of 10 consecutive passages in susceptible children and also after a minimum of four natural passages in contacts. The Russian investigators reported that no greater increase in neurotropism was found after multiple passages than after a single passage and that when virus of greater neurotropism for monkeys was fed it could not be detected in the next passage in the human intestinal tract. The idea of a "fixed" virus has meaning only in relation to its propagation in a medium, in which variants have no selective advantage. If all polioviruses had the capacity of becoming progressively more virulent for man on continued propagation in the human intestinal tract, we would expect to find only highly virulent polioviruses in nature; instead, the viruses recovered from healthy children have exhibited a broad spectrum of low to high neurovirulence, as measured by intracerebral inoculation of monkeys.[2]

It is also important to remember that nature is already full of polioviruses more highly neurovirulent than any that have been found to be excreted by vaccinated persons or their contacts, and it is these naturally occurring virulent viruses that one is attempting to eliminate by a rapid production of so many persons with resistant intestinal tracts that they will have no place in which to multiply.

As the work progressed it became increasingly evident that the ultimate epidemiologic significance for man of the changes that have been observed in the excreted polioviruses could be determined not by any additional tests in culture mediums or in monkeys but only by the effects of contact immunization in large field trials in which about half of a highly susceptible population remained unvaccinated, in regions with a low incidence of naturally occurring polioviruses.

Multiplication of Vaccine Strains, Antibody Response, and Resistance of the Intestinal Tract to Reinfection

All three vaccine strains have been found to multiply extensively in the intestinal tracts of children and adults without antibody or with antibody resulting from inoculations of Salk vaccine, when they were administered one at a time in a dose of 0.01 ml. of the culture fluid. A few adults without demonstrable antibody were found to be resistant to this dose, and there are observations which indicate that resistance of the intestinal tract to certain doses of virus may follow infections which are not associated with readily demonstrable antibody. My own studies as well as those of Smorodintsev have demonstrated extensive resistance of the intestinal tract to reinfection with the same dose of each of the three types of vaccine virus during the first year after oral vaccination. Reinfection tests that I carried out two years after vaccination indicated that the type 1 virus completely failed to multiply in some and multiplied only briefly in others and the type 2 virus failed to multiply in all, while the type 3 virus multiplied for a limited period in all of the eight persons tested. The antibody levels persisted without significant change for two years after oral vaccination, and no relation was found between the level of antibody and resistance to intestinal multiplication of the virus.

In the absence of interference, antibody is demonstrable within 7 to 10 days after infection. Simultaneous feeding of all three types to persons who are susceptible to all three types, and of two types to persons who are susceptible to both, occasionally results in partial or complete suppression of one of the types. Of the three strains that I selected the type 2 was found to be dominant to both types 1 and 3, and type 3 was dominant to type 1. When type 1 was fed first, the type 3 virus readily took over when it was given three to four weeks later, and the type 2 readily terminated the multiplication of type 3 when it was fed after a similar interval. In tests carried out by Smorodintsev[14] and Chumakov[15] on large numbers of children under 3 years of age who received the three types in the order mentioned, 96 to 100% developed antibody for all three types. These investigators also obtained a high incidence of conversions from negative to positive when they fed a mixture of all three types to young children in institutions. The feeding of a mixture of all three types may prove to have certain advantages as a practical public health measure, but only under conditions conducive to extensive secondary spread of the vaccine strains may one expect to obtain a satisfactory result after a single administration.

Interference by Other Enteric Viruses

Intestinal infections with a variety of viruses, including enteric cytopathogenic human orphan virus (ECHO), Coxsackie virus strains A and B, and adenoviruses, as well as naturally occurring polioviruses, have been found to be capable of temporary, partial, or complete suppression of multiplication of the orally administered poliovirus vaccine strains.[16] This interference phenomenon may be expected to play an especially prominent role under conditions of poor sanitation and hygiene in subtropical and tropical regions. The natural spread of the vaccine strains may provide a possible solution to the problem, but only if the poliovirus vaccine strains should be administered on a massive enough scale in a short enough time to outnumber the viruses that are undergoing natural dissemination. A program of administration of the vaccine strains immediately after birth, before the intestinal tract has been invaded by other viruses, needs further extensive study and may provide the best ultimate procedure for immunization with live poliovirus vaccine, after the initial mass vaccination of a population has been accomplished.

Field Trials

The minimum requirements for large-scale field trials are (1) a preliminary serologic survey of the population adequate to permit an estimate of the number of vaccinated and unvaccinated persons without antibody to each of the three types of poliovirus; (2) careful clinical and virological surveillance of the vaccinated and unvaccinated population over a period of many months, including one summer season; and (3) an estimate of the immunogenic effectiveness of the vaccine, under the conditions obtaining in the field, by studies on paired serum specimens obtained at random from both vaccinated and unvaccinated persons.

Early in 1958 Ramos-Alvarez and Gomez[8] in Mexico City fed all three types of the virus at monthly intervals to approximately 3,000 children under 5 years of age. The absence of any untoward reactions in these children and in their contacts during the remainder of the year provided the basis for tests on a larger scale on more than 170,000 children in four cities in 1959. These studies are as yet incomplete and no conclusions are warranted. It is already evident, however, that the spontaneously occurring polioviruses and other enteric viruses in the population played an important role in interfering with the full effectiveness of the vaccination.

Hale and associates[17] recently reported the results of their use of my type 2 vaccine in about 200,000 children under 10 years of age during the course of a type 1 epidemic of poliomyelitis in Singapore. The estimated total number without type 2 antibody has not yet been calculated, but the serologic survey indicated that 87% of the children under 2 years of age, 75% in the 2-to-3-year-old group, and 41% in the 3-to-4-year-old group had no antibody for type 2 virus. Despite the fact that a virological survey revealed that, of the children who came to be vaccinated, about 3% were carriers of type 1 poliovirus and 18% of other enteric viruses, the type 2 virus apparently multiplied in most of the type 2–susceptible children, as indicated by virus excretion and antibody formation. Among the children aged 2 to 10 who had no type 2 antibody prior to vaccination, 93 to 100% were found to have antibody three to four weeks later; the incidence of converters was only 70% in the 3-to-6-month-old children and 86% in the 7-to-23-month-old group. No cases of type 2 paralytic poliomyelitis appeared in any of the vaccinated children, and a single case of paralytic poliomyelitis with only type 2 virus excreted in the patient's stools occurred during the entire period among the 300,000 unvaccinated children of the same age group. The occurrence of 179 type 1 paralytic cases among the unvaccinated compared with only 6 among the vaccinated, during the period of one week after beginning vaccination to the end of the epidemic, requires further detailed analysis but is in accord with the theoretical expectations of partial protection of type 2 vaccine against type 1 paralytic poliomyelitis.

In Czechoslovakia a large proportion of the child population had received three intracutaneous doses of Salk vaccine, and, while the incidence of paralytic poliomyelitis was reduced in this group, 75 of the 169 cases in children under 16 years of age from June to December, 1958, occurred in the triply vaccinated group. To provide a basis for future policy the Ministry of Health, under the direction of Skovranek and others,[16] carried out a large trial with live poliovirus vaccine in one part of the country and gave a fourth dose of Salk vaccine in another and no further inoculations in the rest of the country. The live virus vaccine, a part of the large lots that I had prepared, was given only to 2-to-8-year-old children who had previously had three doses of Salk vaccine. However, a serologic survey carried out just before the program indicated that of the 143,377 who received the type 1 vaccine an estimated 48,172 were without demonstrable type 1 antibody; for type 3 it was 54,856 negative of 127,290; and for type 2 it was 23,406 negative of 114,510.

The three types were given in the order mentioned at four-week intervals beginning Dec. 15, 1958. The total number of inhabitants in the regions in which the live vaccine was used is about 2,600,000, among whom at least 100,000 susceptible persons were available for contact infection. Serologic tests on paired serum specimens obtained at random before and four months after the vaccination program indicated that for type 1 the conversion rate from negative to positive was about 95% in the vaccinated group, 42 to 50% in the unvaccinated children under 10 years of age, and 26% in older unvaccinated persons. Somewhat lower but comparable conversion rates in vaccinated and unvaccinated persons were found for the type 2 and type 3 viruses. Not a single case of poliomyelitis attributable to the virus fed was observed in any of the vaccinated children or their familial associates, and no increase in poliomyelitis morbidity was recorded in the unvaccinated population in the regions where the live virus was used on a massive scale or in the remainder of Czechoslovakia during the first five months of 1959. The Czech investigators concluded that the live vaccine was safe for both the vaccinated children and the community.

The largest and most significant trials were carried out in many republics of the U. S. S. R. under the direction of Chumakov[15] of Moscow and Smorodintsev[14] of Leningrad, to whom I am indebted for the following information. The extensive serologic surveys carried out in the Baltic republics of Estonia, Latvia, and Lithuania, as well as in Byelorussia, Moldavia, and other parts of the U. S. S. R., prior to the initiation of vaccination with live poliovirus vaccine, yielded results comparable to those obtained in many areas of the United States prior to the initiation of the Salk vaccine program. In their preliminary tests early in 1959 the Russian investigators used portions of my original large lots of vaccine on about 70,000 persons. For the subsequent mass tests they used secondary and tertiary lots which they prepared from the original vaccine that I sent them. Comparative tests that they carried out, and tests performed in my laboratory, showed that these secondary and tertiary lots were entirely comparable to the original. By the end of May almost 4 million persons, mostly under 15 years of age, had received the vaccine in the U. S. S. R. According to the serologic surveys already completed, about 30% of these were without antibody for any one type of poliovirus. In Latvia, White Russia, and Moldavia, Smorodintsev estimated that of the 1,400,000 persons vaccinated about 227,000 had triple-negative reactions. In most of the republics only about 50 to 60% of the indicated age groups were vaccinated and the remainder are available for judging the effects of spread of the vaccine strains. Strict clinical and virological surveillance of all suspected persons in the vaccinated and unvaccinated populations led the Russian investigators to conclude at the end of June that the vaccine was safe for the vaccinated persons as well as for the community. Not only was there no increase in the usual number of cases in the unvaccinated during the spring months but by the middle of June the usual seasonal increase had failed to appear. Vaccination continued in the U. S. S. R. until July 15, by which time more than 6 million persons had received live poliovirus vaccine from the secondary and tertiary lots that they had prepared.

The events of this summer in the U. S. S. R. and Czechoslovakia will be followed with the greatest of interest, for they should provide a basis for a final decision on the safety of this live poliovirus vaccine, not only for those who receive it but also for those who become immunized by contact infection after multiple cycles of spread among the unvaccinated population.

Addendum

At the September meeting of the European Association Against Poliomyelitis, Dr. V. Skovranek of the Ministry of Health of Czechoslovakia reported that the seasonal increase in paralytic poliomyelitis occurred as usual, during the months of July and August, in the regions of the country where three or four doses of Salk vaccine had been administered to most children but not in those where live poliovirus vaccine had been given between December, 1958, and February, 1959, to only about 140,000 children out of a total population of all ages of about 2,600,000. Prof. M. P. Chumakov, *in a personal communication, reported as follows: "By September first* total number vaccinated with Sabin vaccine exceeded 10 million, including 8,680,000 with vaccine prepared in Moscow. In Estonia and Lithuania number of polio cases in June, July and August ten times lower compared to average for same period in many years."

These observations, made during the summer months in Czechoslovakia and the U. S. S. R., provide the definitive information that was being awaited regarding the safety of this live poliovirus *vaccine not only for those who receive it but also* for those who become immunized by contact infection. The occurrence of several thousand cases of paralytic poliomyelitis in the United States and Canada during the past year indicates that, while the available Salk vaccine has undoubtedly prevented a great deal of paralytic poliomyelitis, it is inadequate in eliminating the disease or providing full protection. In my opinion, the persons responsible for public health in the United States must *take immediate steps to check on the validity of the results of these immense field trials with this live* poliovirus vaccine in the U. S. S. R. and Czechoslovakia and in the meantime do everything possible to have it available for widespread use before the 1960 poliomyelitis season.

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STATISTICAL EFFECTS OF ASIAN INFLUENZA.—The average length of life (expectation of life at birth) in the United States was 69.3 years in 1957, or 0.3 years below the all time high registered in 1954 and again in 1956. The slight setback in 1957 resulted largely from the widespread prevalence of Asian influenza and other upper respiratory infections during the late months of the year. Even so, the 1957 experience was more favorable than that for any year prior to 1954, the average length of life being 2½ years greater than in 1947 and 20 years above that around 1900. A century ago the average lifetime was only about 42 years —three fifths the current figure.—Longevity of the American People in 1957, (Statistical Bulletin) *Metropolitan Life Insurance Company,* July, 1959.

REACTIONS TO POLIOMYELITIS VACCINE

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Complaints received by a manufacturer from physicians concerning unfavorable reactions to formaldehyde-inactivated poliomyelitis vaccine have been analyzed. The use of 184,000,000 doses of vaccine was followed by 284 complaints, of which 138 concerned only stinging or burning local pain. In six instances the symptoms suggested poliomyelitis, but in no case were the three essential criteria of inoculation-induced poliomyelitis satisfied. The most severe reactions reported in connection with this vaccine were four anaphylactoid reactions, and in each case recovery was complete. The most frequent types of reaction were allergic (56 cases) and neurological (37). The complaint rate was therefore extremely low, and the relative safety of the vaccine was apparent.

Poliomyelitis vaccine is unique among immunizing biologicals for the very low reaction rate which attends its use. This report is based on the data on reactions reported to Eli Lilly and Company in connection with the production of over 184,000,000 ml. of poliomyelitis vaccine.

Anticipated Reactions

When the vaccine was first made available, certain possible reactions were anticipated.[1] Encephalitis, meningoencephalitis, neuritis, and other neurological illnesses were considered because of the experience with other immunizing biologicals. Such reactions have been recorded after the administration of smallpox vaccine, pertussis vaccine, diphtheria toxoid, tetanus antitoxin, and many other agents.

Because the virus was propagated in monkey kidney cells, the vaccine theoretically could contain Rh antigen and kidney protein. Therefore, hematological illness due to Rh sensitization and renal disease due to sensitization with renal protein were considered possible.

It was also anticipated that certain allergic manifestations might occur, because all manufacturers, in addition to using monkey kidney protein, used penicillin, streptomycin, poliomyelitis virus, phenolsulfonphthalein, and a synthetic medium of many constituents in some phase of the production of poliomyelitis vaccine. Furthermore, the Lilly poliomyelitis vaccine, which is made by the Maitland (minced monkey kidney) technique, contains thimerosal (Merthiolate) and sodium ethylenediaminetetraacetate. Other manufacturers use one or more of a variety of substances in the production of their vaccine: polymyxin, trypsin, benzethonium, methylparaben, propylparaben, and calf or horse serum. With this impressive list of possible allergens, allergic reactions were rightfully considered a potential hazard.

Although the list is long, the concentration of the various ingredients is extremely small. The final concentration of total nitrogen (from the medium itself, poliomyelitis virus, monkey kidney, and possibly other proteins produced during viral growth) is 0.35 mg. per milliliter. The synthetic medium contains 0.25 mg. of nitrogen per milliliter. Recent exhaustive studies in our laboratories have shown the penicillin content of Lilly poliomyelitis vaccine to be less than 0.001 unit per milliliter in about 80% of lots; all lots contain less than 1.0 unit per milliliter. Interestingly, if vaccine from a lot containing a detectable amount of penicillin is added to vaccine containing no detectable penicillin, within 24 hours penicillin cannot be identified in the mixture. This suggests the presence of trace amounts of a penicillin-destroying substance, such as penicillinase, in the vaccine.

Incidence of Reactions

Several investigators have assessed the incidence of reactions to poliomyelitis vaccine. In the first of these studies, done in preparation for the field trials of 1954, 7,507 children were inoculated with commercially prepared vaccine[2]; the only reaction encountered was one instance of urticaria. In the field trials themselves,[3] minor reactions (faintness, dizziness, nausea, slight rash, and colds) were observed in 0.6% of children inoculated, and major reactions (severe rash, fever, severe pain in arms and legs, and central nervous system or renal disease) in 0.004%, i. e., 1 in 25,000.

It is significant that controls were employed only in the field trials. Then the incidence of allergic symptoms after injection was similar in those given vaccine, those given placebos, and those who received no injection but were merely observed.

One study,[4] which arrived at an incidence of reactions of 2.51%, is difficult to evaluate because of the lack of control subjects and the practice of recording as a separate reaction each symptom of any one person.

More recently, the reactions which followed the administration of 138,528 injections were recorded.[5] Local irritation and pain at the injection site occurred in 15% of persons; generalized tiredness and headache were relatively common in adults; more specifically, fever, urticaria, skin rash, asthma, polyarthritis, heaviness in the vaccinated arm,

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transient flaccid paralysis, and meningoencephalitic complications were recorded a total of 82 times—an incidence of less than 0.1%.

Report of Reactions

The information presented in this report is derived from the complaints received by Eli Lilly and Company from physicians concerning reactions to poliomyelitis vaccine. All complaints are included (see table), and no attempt has been made to eliminate those which may not have been due to the vaccine. In many instances, the reporting physician indicated that he did not believe that a particular reaction was related to the vaccine but that he was reporting it either for our information or in the course of an inquiry about our receipt of similar complaints. The classification is arbitrary, and a particular complaint could have been placed in one of several categories. However, for simplicity, each complaint is listed only once according to what appears to be the dominant symptom or symptoms.

*Summary of Reactions Reported to Manufacturer 1955-1959**

Reactions		Total
Pain on injection		138
Neurological		37
"Poliomyelitis" after injection	6	
Weakness (not poliomyelitis)	3	
Meningeal irritation	9	
Encephalitis	5	
Convulsions	4	
Syncope	5	
Neuropathy of facial nerve (Bell's palsy)	3	
Paresthesias	2	
Allergic		56
Anaphylaxis	4	
Urticaria	21	
Skin rashes	14	
Miscellaneous	17	
Febrile reaction		11
Local reaction		17
Miscellaneous		17
Unspecified		8
Grand total		284

*During this interval, over 184,000,000 ml. of vaccine was released.

There have been a total of 284 complaints (see table). Of course, this does not represent all of the reactions which have occurred with the use of the product, and, therefore, the incidence of reactions cannot be computed from these data. Because the product is new, it seems likely that most of the severe reactions would have been reported. In addition, it is probable that the company is notified of a greater percentage of the less significant reactions than is the case with other more-established biologicals. This is perhaps borne out in some measure by the fact that nearly half (138) of the total number of complaints have been concerned with burning or stinging pain on injection. This leaves 146 possibly significant complaints recorded in connection with the use of 184,000,000 doses of vaccine, a complaint rate of 1 per 1,200,000.

In six instances, a clinical picture resembling poliomyelitis was recorded after the injection of the vaccine. Weakness in the extremities not diagnosed as poliomyelitis was reported three times; in two patients, it was transient; in the third case, an adult male developed weakness of his left leg after a second injection and more severe weakness after a third injection.

Meningeal irritation includes all complaints in which a stiff neck was prominent in the symptomatology. In various patients, headache, pain in the back or legs, fever, and vomiting were prominent. In none of the patients with encephalitis were laboratory data available to identify the etiological agent. Convulsions were reported four times. In three instances, they occurred almost immediately after injection of the vaccine; in the fourth, 17 convulsions occurred seven days after a second dose of vaccine. Syncope was apparently related to emotional stimuli associated with the injections. Neuropathy of facial nerve (Bell's palsy), with onset 5 to 10 days after administration of the vaccine, was reported on three occasions. In the two patients with paresthesias, recovery was complete within 24 hours.

Four instances of anaphylactoid reactions were reported. In two, further details were not available. In the other two, there was a history of previous allergy, and the evidence indicates that vaccine may have been the cause of the reactions. Recovery in all was complete. A subsequent skin test in one patient indicated sensitivity to the vaccine; perhaps these reactions could have been avoided by prior skin testing. These anaphylactoid reactions are the most severe reactions that have been reported in connection with the vaccine.

Urticaria occurred within a few hours up to 10 days after administration of the vaccine. It occurred in persons with and without previous histories of allergy as well as in persons known to be sensitive and in those known to be not sensitive to penicillin. The cases of skin rash usually concerned nondiagnostic macular or maculopapular erythematous lesions but included two patients who had exfoliative dermatitis. Included in miscellaneous allergic reactions were four examples of local reactions observed in patients known to be sensitive to mercury, two patients who had symptoms similar to serum sickness, one who developed periorbital edema and conjunctivitis 24 hours after administration of vaccine, and a young boy with a history of severe allergy who had local erythema at the injection site after the administration of vaccine. In addition, in nine instances, physicians stated that patients had allergic reactions, but there was no description of the reaction or the circumstances in which it occurred.

Patients who had febrile reactions had many other manifestations, including headache, croup, adenitis, sore throat, myalgia, conjunctivitis, and in one case a rash. Local reactions consisted of erythema, induration, and swelling at the site of injection with or without fever.

Under miscellaneous reactions were included a variety of complaints which could be classified under one of the other headings. The fact that each one was reported only once or twice in connection with this vast amount of vaccine is substantial evidence that these were coincidental occurrences and had no relation to the vaccine.

Comment

Since the introduction of poliomyelitis vaccine there has been concern that the vaccine might precipitate or, by containing live virus, actually cause poliomyelitis. Evaluation of this point is hampered by the fact that when millions of persons are immunized, almost certainly some are infected with the virus at the time of injection of vaccine or they acquire infection soon after vaccine is given.

Poliomyelitis due to the injection of live virus has three characteristics: its onset occurs 4 to 14 days after injection, paralysis will tend to occur in the inoculated extremity, and more cases will occur after the use of the suspect lot of vaccine than would be expected from coincidental infection. From the data of the Poliomyelitis Surveillance Unit of the U. S. Public Health Service, it is apparent that never has the use of any lot of the vaccine under discussion been followed by paralytic disease with these three characteristics. In addition, no commercial lot of this vaccine has ever been shown to contain live poliomyelitis virus by meticulous tissue-culture and monkey safety tests. On this basis, it seems likely that cases of poliomyelitis which occurred after injection of the vaccine were coincidental to its use.

The significance of the various other neurological manifestations is difficult to assess. Such illnesses have been associated with other immunizing agents, and in the final evaluation it may be that poliomyelitis vaccine will be implicated in some of them. With such an extremely low incidence, the possibility is great that intercurrent illness is responsible for most of them.

It appears that the risk of sensitization to monkey kidney protein or the Rh antigen, if it exists at all, is very small. Asthma after injection of vaccine has been reported in one child sensitive to monkey tissue.[6] There is also one case of anemia among our miscellaneous complaints, but the evidence would indicate that the vaccine was not responsible.

Several articles have been published reporting allergic reactions which have followed administration of poliomyelitis vaccine. When the incidence is so low, it becomes difficult to know if the vaccine per se was responsible. Wolf and Pinsky[7] observed typically allergic reactions after the administration of placebos.

Penicillin has been incriminated as a cause of the allergic reactions. Antibiotics cannot be omitted from the manufacturing process of poliomyelitis vaccine. They are essential to prevent bacterial contamination of the tissue culture. In the process of making vaccine, monkey kidney cells are grown for six days in nutrient medium to which penicillin and streptomycin have been added. Then, the fluid is removed and replaced with fresh medium, again containing penicillin and streptomycin. At this time, poliomyelitis virus is added and allowed to grow for four days at 37 C. The virus-laden fluid is then separated from the monkey kidney cells and subjected to formaldehyde inactivation for 13 days at 37 C. Thus, after the final addition of penicillin to the tissue-culture fluid, it is incubated at 37 C for a total of 17 days. At the end of this time, penicillin is usually not detectable. With so many other allergens in the vaccine, considerable confirming evidence would be needed to establish an association between a given allergic manifestation and penicillin.

Certainly, a very high degree of sensitivity to penicillin, so high that it is only rarely encountered, would have to exist if the penicillin in the vaccine were to be a cause of reactions. In the field trials, children sensitive to penicillin were given the vaccine without difficulty. In addition, Siegal[8] gave the vaccine to persons known to be penicillin-sensitive and concluded that no hazard should accrue from the administration of the vaccine to such people. Since an infinitesimal quantity of penicillin is probably present in all poliomyelitis vaccine, it has been suggested that penicillinase be added to the vaccine before it is given to penicillin-sensitive persons. If one elects to use penicillinase, it should be recognized that it too is a foreign protein and that allergic reactions to it have been reported.[9]

For a proper perspective, these data may be compared with information about other immunization procedures. In 1947, 45 cases of encephalitis and four deaths occurred after about 5 million smallpox vaccinations in New York City.[10] Berg[11] collected the reported cases of neurological complications of pertussis immunization. He found 107 cases with 15 deaths since 1933. When the millions of doses of poliomyelitis vaccine are viewed against this background, the relative safety of the vaccine is apparent.

Summary

Reactions have been reported to Eli Lilly and Company in connection with over 184,000,000 doses of its poliomyelitis vaccine. Of a total of 284 complaints, 138 were concerned with burning or stinging pain on injection. There were 37 neurological, 56 allergic, 11 febrile, 17 local, 17 miscellaneous, and 8 unspecified reactions, or a total of 146 possibly significant reactions—a "complaint rate" of 1 per 1,200,000 doses. Because of incomplete reporting, the data do not allow an estimate of the incidence of reactions, but they do indicate that reactions are extremely infrequent and that allergic reactions are not a serious problem.

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STUDY OF THREE HUNDRED EIGHT OPERATIONS FOR STRICTURE OF BILE DUCTS

FOLLOW-UP PERIODS OF ONE TO FIVE OR FIVE TO TWENTY-FIVE YEARS

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and

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The late results of operations to correct stricture of the bile ducts were investigated in 265 patients who responded to requests for follow-up study. They had undergone altogether 308 operations from 1 to 25 years before the time of the study. In every case but one the stricture followed surgical injury. The operations done to correct the stricture were usually either choledochocholedochostomy or choledochoduodenostomy, and the results of these two were about the same, with 68 and 69% of good or excellent results in the patients reporting. Even when strictures were so located that no patent extrahepatic duct was visible, it was often possible to relieve the biliary obstruction by special procedures. Two patients were pregnant at the time of operation, and there were 19 subsequent deliveries in 14 patients, all but one delivery being normal, full-term, and spontaneous. Among the 191 patients followed up for more than five years, there were 28 deaths and 16 of these were ascribed to cirrhosis or liver failure.

Prior to Nov. 4, 1958, one of us (W. W.) had operated on 429 patients with stricture of the bile ducts at the Mayo Clinic. On some of these patients more than one operation had been performed. On several other occasions reports of follow-up studies have been made on some or all of these cases. On this occasion, it seemed advisable to study the results of the operations used in the correction of the strictures after a lapse of 5 to 25 years.

We heard from 191 patients in this group (all of whom were operated on prior to 1953), and these 191 patients had had 217 operations. Sixty-one per cent of the operations gave excellent or good results and 7% fair results (table 1). We then decided to extend the study to the patients operated on more recently, that is, from 1953 through 1957 with a follow-up of one to five years. Seventy-four patients on whom 91 operations have been performed were heard from in this group. Twenty-two were men and 52 were women. As might be expected, the results were a little better with a shorter follow-up. Both excellent and good results showed an increase of 5 percentage points, with the poor

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results being a little more than half (19%) as large as those of the long-term group. The operative mortality for the entire group was about 5%. Results of the operations were about the same for the two sexes in the patients operated on one to five years previously.

Pregnancy in Follow-up Period

Four women in the group volunteered information that they had had pregnancies which went on to term after operation. Two of these were pregnant (one for one month and the other for five months) at the time of the operation. This interested us, since we had advised seven patients against becoming pregnant because of fear that severe dysfunction of the liver might occur. As a result of this advice two of the husbands had ligations of the ductus deferens and one patient had bilateral oophorectomy. It seemed necessary, therefore, to see what the results had been in other women in the childbearing period who became pregnant after having been operated on for stricture of the bile ducts.

Fifty-three patients qualified for study and 50 replied by May 26, 1959. The results are interesting. There were 19 deliveries in 14 patients, and all but one was a normal full-term spontaneous delivery. These patients were not in a selected group of those having good or excellent results from their operations for stricture; nine had reported either excellent or good results, two had fair, and three had poor results. All types of operations had been performed. Six patients had had hepaticoduodenostomy, two had choledochoduodenostomy, two had hepaticojejunostomy of the Roux-Y type, one had a double hepaticojejunostomy, one a double hepaticoduodenostomy, one a choledochocholedochostomy, and one a cholecystenterostomy. We have gone into detail regarding this group of cases because it seems to illustrate that there was no appreciable evidence of anastomotic dysfunction or disturbance of liver function during pregnancy and childbirth.

TABLE 1.—*Results of Operations for Stricture of Bile Ducts, by Percentage*

Results*	5 to 25-Yr. Follow-up†	1 to 5-Yr. Follow-up‡
Excellent	30	37
Good	31	36
Fair	7	8
Poor	32	19

* Criteria for results are given in text.
† 217 operations.
‡ 91 operations.

Only one patient had any signs or symptoms of biliary obstruction which were not present before the pregnancy; these symptoms were mild abdominal pain during the last three months of pregnancy. Stools were colorless for a few days after the delivery, yet there were no subsequent symptoms and the patient has been in good health since. Patients who had fair or poor results before their pregnancies continued to have some symptoms of biliary obstruction but to no greater degree than they had been having before the pregnancies. Of further interest is that half these patients had a hepatitis of grade 3 or 4 at the time of operation on their bile ducts. The corollary of this is that patients operated on for stricture of the bile ducts have not been harmed by pregnancy—and normal deliveries of normal infants have occurred.

TABLE 2.—*Results of Various Operations for Stricture of Bile Ducts**

Operation and Follow-up Group, Yr.	Total Operations	Excellent or Good Results, %
Choledochocholedochostomy		
5 to 25	48	68
1 to 5	21	88
Choledochoduodenostomy		
5 to 25	41	69
1 to 5	17	82
Hepaticocholedochostomy		
5 to 25	11	40
1 to 5	4	25
Hepaticoduodenostomy		
5 to 25	69	55
1 to 5	20	60
Double hepaticoduodenostomy		
5 to 25	17	65
1 to 5	6	50
Double hepaticojejunostomy		
5 to 25	3	100
1 to 5	3	66
Hepaticojejunostomy		
5 to 25	5	20
1 to 5	8	63

* Results of such miscellaneous operations as hepaticostomy, insertion of T tubes, and choledochojejunostomy are not included.

Results by Type of Operation

Results of operations for stricture were considered (1) excellent when the patient reported good health, with no chills, fever, or jaundice and no pain, or only occasional vague discomfort, seemingly not associated with the biliary tract; (2) good when the patient reported good health and one or more of the following symptoms only occasionally and in mild degree: fever, chills, pain, and slight or only questionable jaundice; (3) fair when the patient had more frequent attacks of biliary obstruction but was able to work; and (4) poor when one or more of the symptoms kept the patient from carrying on normal activities.

The number of anastomoses of the common or hepatic duct above the stricture to the duodenum was twice that of the ductal anastomoses (choledochocholedochostomy). The results of the various types of operations are shown in table 2. Briefly, in ductal anastomoses and when enough common or common hepatic duct was present to permit an accurate biliary-intestinal anastomosis (and they were mostly biliary-duodenal), excellent and good results were about 70% in the group with the 5-to-25-year follow-up and 82 to 88% in the group with the 1-to-5-year follow-up.

In 29 patients the stricture was so extensive that it was necessary to dissect out both hepatic ducts from the parenchyma of the liver; in 23 of these patients the ducts were anastomosed to the duodenum and in 6 to the jejunum. That these difficult procedures for extensive strictures of the bile ducts gave excellent or good results in almost the same percentage of cases as those in which the common or common hepatic ducts were anastomosed to the duodenum or jejunum emphasizes the fact that, no matter how extensive the stricture or how many previous operations the patient has had for its correction, if biliary obstruction has developed further operation should be undertaken, since an effectively functioning anastomosis may be possible between the hepatic ducts and the duodenum or jejunum. In the long-term follow-up group 26 patients had had four previous operations and 11 had had five to eight operations for the correction of the stricture previous to the time of the operation by one of us (W. W.).

TABLE 3.—*Late Deaths in Group Operated on for Biliary Stricture Prior to 1953*

Cause of Death	No. of Deaths	Condition of Liver at Operation	No. of Cases
Cirrhosis	7	Hepatitis and cirrhosis	6
Liver failure	9	Hepatitis, grade 3 or 4	4
		Cirrhosis	4
		Normal liver	2
Cardiovascular accidents	3	Hepatitis, grade 3	2
		Hepatitis, grade 2	1
Cardiac failure	2	Hepatitis, grade 3	1
		Cirrhosis	1
Carcinoma of lung	1	Normal liver	1
Carcinoma of uterus	1	Normal liver	1
Unknown	5	Hepatitis and cirrhosis	3
		Cirrhosis	1
		Normal liver	1
Total	28		

Mention should be made of the use of hepaticostomy, that is, the insertion of a catheter into a dilated intrahepatic duct near the hilus of the liver in which stricture of the extrahepatic ducts seems to be complete. Spontaneous fistulas between biliary tract and duodenum developed in 8 (67%) of the 12 patients treated by hepaticostomy. Two of the eight have had excellent results and one patient had a fair result after the development of the internal fistulas. As a result of relief of the biliary obstruction, the patients' conditions improved and the size of the liver decreased so that we were able, at a later operation, to make a biliary duodenal anastomosis in three of these remaining five patients, two of whom had excellent results and one a poor result.

In the series with the short-term follow-up, hepaticostomy was performed twice. One patient died within six months from hepatic failure, and one is living in good health five years after the operation and the development of an external biliary fistula.

The point to be emphasized is that, when a complete stricture of the extrahepatic ducts has occurred, a dilated intrahepatic duct can usually be found near the hilus of the liver by inserting an aspirating needle attached to a syringe. When the duct is found, an opening can be made into the intrahepatic duct by use of a small-bladed scalpel cutting into the liver along the course of the needle.

Many of the patients with good and excellent results have reported two or three episodes of cholangitis the first year after operation. These then disappeared. This is important because, if attacks continue or worsen, it means that obstruction of the anastomosis has occurred and further operations may be necessary to relieve it.

Prosthetic Splints.—Generally speaking, prosthetic splints used in the anastomoses were of two types. T tubes were used in duct-to-duct anastomoses as well as in biliary-intestinal anastomoses when the patient was deeply jaundiced and there was a good deal of bile pigment debris and stones within the intrahepatic duct. Use of T tubes permitted the washing out from time to time of any bile pigment debris or stones that might have accumulated in the radicles of the intrahepatic bile duct. In addition, such tubes gave immediate and certain relief of the biliary obstruction. The other most frequently used prosthetic device was a piece of catheter with two oversized catheter rings around it (the Mayo-Sullivan tube). This type of prosthesis was used more frequently than the T tube for hepatic duct-to-duodenal anastomoses (hepaticoduodenostomy), especially when there was but a fringe of duct left to anastomose. Almost equally good or excellent results followed its use when the common duct was anastomosed to the duodenum (choledochoduodenostomy) in the absence of intrahepatic stones or bile pigment debris.

Long-term results of double hepaticoduodenostomy (total of 17 cases) were excellent or good in five of the six cases (83%) in which Mayo-Sullivan tubes were used as the prostheses and in only five of eight cases (63%) in which T tubes were used. In nine cases in which biliary-duodenal anastomoses were made no prosthetic devices were used, and good or excellent results followed in seven cases (78%). Generally speaking, T tubes were kept in for six to nine months, while the Mayo-Sullivan tube remained for varying periods of weeks to months.

Effects of Cirrhosis of Liver and Hepatitis.—Twenty-eight deaths occurred during the follow-up period in the 5-to-25-year series; 16 were from cirrhosis or liver failure (table 3). Fourteen of these 16 patients had cirrhosis or hepatitis, grade 3 or 4, at the time of the operation. The remaining 12 deaths were due to causes unrelated to the operation: 2 from carcinoma (one of the lung and one of the uterus) and 5 from cardiovascular disease.

In the series with the short-term follow-up there were seven deaths. Five occurred immediately after operation; two of these five were due to liver failure, one to pulmonary embolus, and two to uncontrollable intestinal bleeding. Of the two deaths in the follow-up period, one occurred six months after operation from hepatic failure and the other, five years after operation from a cardiovascular accident.

Comment

This is a follow-up report of results of 308 operations for stricture of the bile ducts performed by one of us (W. W.) on 265 patients. Two series were studied: in the first the follow-up period was 5 to 25 years, and in the second it was 1 to 5 years. The purpose of the division into periods of time was not only to see what the long-term results were but to contrast the two groups.

In the long-term group 191 patients who had had 217 operations replied to the questionnaire and in the short-term group 74 patients who had had 91 operations were included. About 20% of the patients had had two or more operations for stricture performed by one of us.

Excellent and good results followed 61% of the 217 operations on patients having a 5-to-25-year follow-up and 73% of the 91 in the short-term group. Fair results were obtained in an additional 7 and 8% respectively.

The results from choledochocholedochostomy (duct-to-duct anastomosis) and from choledochoduodenostomy were practically the same in each series, with good or excellent results in 68 and 69% of cases, respectively, in the long-term group and in 88 and 82% in the short-term group. These procedures made up the major portion of the operations, although hepaticoduodenostomy, both single and double, with single or double hepaticojejunostomy was performed in appreciable numbers of cases with almost equally good results, even in the 29 cases in which it was necessary to dissect out both hepatic ducts from the liver parenchyma to anastomose them to the duodenum or jejunum. The best results in general followed the use of T tubes in duct-to-duct anastomoses and in choledochoduodenostomy or hepaticoduodenostomy when bile pigment, stones, and infection were present in the intrahepatic ducts. The Mayo-Sullivan tube gave the best results in hepaticointestinal anastomoses when intrahepatic infection or bile pigment did not complicate the stricture. This was particularly true when the common hepatic duct remnant was very short or where both hepatic ducts were anastomosed to the duodenum. T tubes were left in for six to nine months and the Mayo-Sullivan tubes from weeks to months. Fourteen women gave birth to 19 children normally without disturbances of the functioning of the anastomosis or the liver.

Many of the patients with good and excellent results have reported two or three episodes of cholangitis the first year after operation; these then ceased. This is important because if attacks continue or worsen it means obstruction of the anastomosis, and further operation is usually necessary.

It is of interest that stricture was due to surgical injury in all except one of the 191 patients studied in the long-term group and in all of the patients in the short-term group. In the one exception it was due to external trauma to the abdomen. Late deaths were due largely to severe cirrhosis with and without hepatitis present at the time of operation or to unrelated causes, such as cardiovascular lesions.

This study has brought out several points that are worth emphasis:

1. Regardless of the number of previous attempts to repair the stricture, no patient should be denied operation unless evidence of hepatic insufficiency, characterized by ascites with a long history of deep jaundice, is present.
2. Cirrhosis of the liver is not a contraindication to operation unless hepatic insufficiency with ascites is present. It increases the risk, however, and makes the operation more difficult because of the collateral circulation, and the end-results are not nearly so good.
3. Even though one surgeon may report that no duct is present outside of the liver, this does not mean that another surgeon of greater experience may not find enough duct, or dissect out enough at the hilus of the liver, to enable him to restore biliary-intestinal continuity. Furthermore, even when no extrahepatic duct is found, relief of the biliary obstruction by insertion of a drainage catheter into a dilated intrahepatic duct may cause a sufficient decrease in the size of the liver so that an accurate biliary-intestinal anastomosis can be made at a second operation or a spontaneous biliary intestinal fistula may result.
4. Usually more of the duct at the upper end is uninvolved in the stricture than appears evident at first because of the overlying hepatic tissue. Thus, if the duct is found, it can be grasped at its open end with Allis forceps and dissected from the overlying hepatic tissue or from the tissue surrounding it at the hilus.
5. The intrahepatic ducts should be searched for stones with the exploring scoops, for such stones are a frequent accompaniment of strictures of the common duct.
6. Before making a duct-to-duct anastomosis, the surgeon must be sure that the ampulla is free of stones and that the continuity between the hepatic and common ducts and the duodenum is not impaired.
7. The proper length of time for the prosthetic splint to remain in the anastomosis to prevent constriction is still being investigated.

HERPES ZOSTER IN CHILDREN

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Herpes zoster, erroneously considered a rare disease in children, is fairly common but often unrecognized because it produces little reaction in the pediatric patient. Clinical observations of seven children with this illness are presented. None of the children had been exposed to the herpes zoster virus before the onset of illness. Five had had chickenpox (immunologically related to herpes zoster) during the first year of life. The vesiculobullous lesion occurring in the children's skin had the appearance and herpetiform grouping typical of lesions in the adult. Complications of the disease were like those in the adult except that postherpetic neuralgia did not occur. Neither the illness nor its complications are usually severe in this age group. The youngster requires only supportive care and, occasionally, specific attention to the skin lesions.

Herpes zoster is a vesiculobullous eruption of the skin secondary to involvement of sensory ganglions and nerves by the varicella-zoster virus. Almost all recorded experience with this problem concerns adult patients who have had varicella at some time during their life. This is one reason that herpes zoster has been considered as an immunologically modified form of varicella (chickenpox).

Comby[1] reported in 1922 on 84 personal cases collected during 40 years of interest in the problem of zona (herpes zoster) in children. Only 20 of his patients were under 5 years of age, but the number of observations that he made indicates that the available statistics do not present a complete picture. In his experience, the sex distribution was about equal. He was of the opinion that these patients were rarely in good health, and he thought that tuberculosis predisposed to the development of herpes zoster. The eruption consisted of painless vesiculobullous lesions evolving rapidly and healing without complication, as compared to the lesions in adults. No other experience reported in the literature is so extensive.

This disease has been considered such a rarity that individual case reports in children, such as that of Madden,[2] have been significant. A truly rare occurrence is herpes zoster neonatorum, of which 10 cases have been reported. The latest, reported by Feldman,[3] occurred in only one of a set of twins. The mother had not had a recognizable infection. The obstetrician who delivered the children and the bacteriologist who handled the material had herpes zoster 14 and 15 days, respectively, after contact.

We have observed seven cases of herpes zoster in young children in the past three years at the Mayo Clinic and believe that it must be more common than written medical experience would indicate. We present the following case reports to emphasize those special clinical features which characterize herpes zoster in the child and to indicate how this condition may be best diagnosed and treated. Some of the data in these seven cases are summarized in the accompanying table.

Report of Cases

CASE 1.—A 7-month-old boy, the result of a normal pregnancy and delivery, had a three-day history of a papulovesicular rash on the upper part of the right arm. Subsequently, new vesicles on an erythematous base appeared, grouped in plaques along the arm and over the central portion of the back (fig. 1). The child apparently was not distressed by the eruption. No scratching, crying, or disturbance of normal function was noted. The child had not been taking any medicaments and had been essentially well except for mild coryza before the rash appeared. No prior history of childhood diseases was elicited. Vaccination against diphtheria, pertussis, and tetanus (DPT) had been completed two months before. Smears from the floor of the bullae revealed giant balloon cells (fig. 2). All residuals had healed in one month.

CASE 2.—A 2-year-old boy was brought to the clinic because of a vesicular eruption of the right scapular and axillary region of four days' duration. The patient complained of mild pruritus of the area but no pain. He had been somewhat restless during the night. Grouped vesicles on erythematous, edematous bases were present in a unilateral distribution along the right upper part of the back. A few vesicles were noted lower on the back. This patient had had mild varicella at the age of 2 months, when his sister, at that time 3 years of age, had also had the disease. The patient had been exposed recently to a person who had varicella. With topical therapy the lesions underwent involution in three weeks.

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Case 3.—A 2½-year-old girl had an eruption of three days' duration on the left thigh that spread to involve the buttocks. Examination disclosed a vesicular papular eruption on the lateral aspect of the left buttock and thigh and the medial aspect of the left thigh, with a considerable amount of underlying induration. Her rectal temperature was 100 F (37.8 C). The diagnosis of herpes zoster was concurred in by the pediatrician and the dermatologist. Two days later a generalized eruption of single discrete vesicles developed over the face, back, and trunk, with a total of 30 to 35 lesions. Within two weeks this eruption had almost disappeared. She had been exposed to varicella one month and again two weeks prior to the development of the eruption. The child had had varicella at the age of 2 months, when three other siblings had had the disease.

Data in Seven Cases of Herpes Zoster in Children

Age, Yr.	Sex	Primary Location of Lesions	Duration of Lesions, Wk.	Pain	Sequelae	Age at Previous Varicella	Known Exposure to Varicella*
7/12	M	Right arm and shoulder	4	0	None	None	No
2	M	Right shoulder and axilla	3	0	None	2 mo.	Yes
2½	F	Left thigh, buttocks	3	0	Generalized herpes	2 mo.	Yes
2½	M	Right lumbar and inguinal region	4	+	Cutaneous scars	1 yr.	No
4	M	Left thorax	2	0	None	2 yr.	Yes
4	M	Right thigh, leg, and hip	3	+	Meningitic reaction	3 mo.	No
5	M	Left leg and thigh	2	+	Generalized herpes	8 mo.	No

* None of the patients was known to have been exposed to herpes zoster.

Case 4.—A 2½-year-old boy had a one-week history of pain in the surface tissues of the right lumbar region, extending anteriorly to the right lower quadrant of the abdomen and the inguinal zone. This had been followed by a grouped vesicular eruption on an erythematous base. One zone of superficial necrosis of the skin was present over the lumbar region. The patient was the result of a normal pregnancy and had completed his DPT and smallpox vaccinations two years before. He had experienced a nonspecific dermatitis two years previously which disappeared without therapy. He had had varicella at the age of one year. Balloon cells were found on smears made from the current lesions. The lesions underwent involution in three weeks after the local application of an antibiotic cream. Permanent scarring occurred.

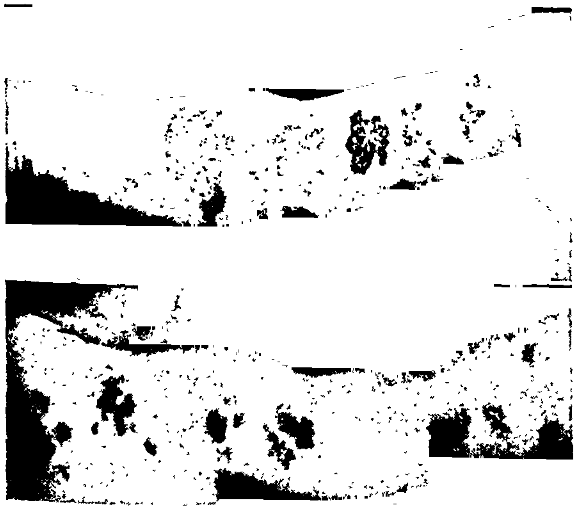

Fig. 1 (case 1).—Eruption of grouped vesicles on urticarial base on arm and shoulder.

Case 5.—A 4-year-old boy had a one-week history of an asymptomatic papulovesicular eruption on the left side of the thorax. Lesions had continued to develop during the week. At the time of examination only crusted dry papules were present in a band on the right side of the thorax laterally and anteriorly. The only treatment had been with the use of baby oil. The lesions resolved with local therapy in two weeks. The child had had varicella at the age of 2 years.

Case 6.—A 4-year-old boy had pain in the superficial tissues of the medial aspect of the right thigh for four days. This was followed by the onset of a vesicular eruption, which spread in two days to involve the anterior and lateral aspects of the thigh (fig. 3*a*). Local treatment with hydrocortisone and antibiotic medication were without effect. Twenty-four hours prior to admission the pain suddenly became severe, and grouped vesicular lesions were noted over the sacral region and right hip (fig. 3*b*). The patient had had varicella at the age of 3

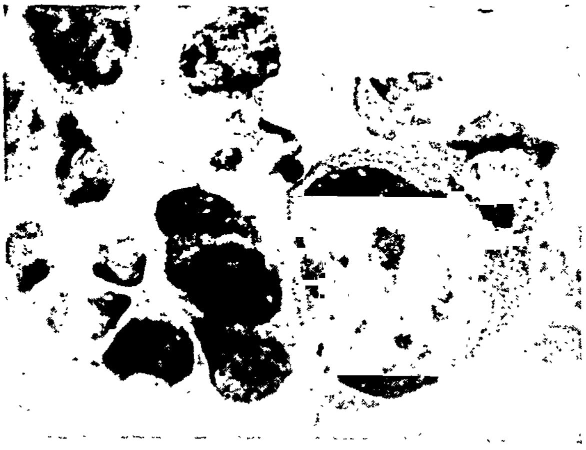

Fig. 2 (case 1).—Giant balloon cell in smear of material from floor of bullae in herpes zoster (Wright's stain; × 960).

months, when one sibling had had the disease. Another sibling had died of asthma at the age of 5 months. A sister, 13 years of age, had had rheumatic fever.

Examination disclosed a rectal temperature of 103 F (39.4 C). The patient complained of frontal headache. Moderate stiffness of the neck and pain on flexion were present. A questionable Kernig's sign was noted. The rest of the examination gave normal results. The cerebrospinal fluid contained 60 mg. of sugar, 667 mg. of chloride, and 30 mg. of protein per 100 ml.; it also contained 170 lymphocytes per cubic millimeter. Bacteria were not found. The pain subsided promptly after application of wet dressings to the affected regions. The neurologist and the pediatrician agreed that the patient had a meningitic reaction to generalized herpes zoster. Two days later the patient was afebrile, and all evidence of nuchal rigidity and meningeal irritation had disappeared. Five days later the temperature was still normal, the patient was comfortable, and the lesions were undergoing involution asymptomatically. Healing was complete in three weeks.

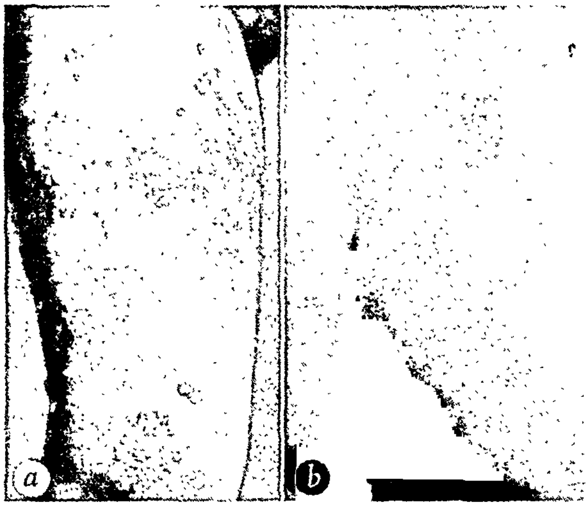

Fig. 3 (case 6).—*a*, Characteristic zoster eruption of right thigh; *b*, grouped vesicles of sacral region.

Case 7.—A 5-year-old boy had been well until four days prior to observation. At that time, he complained of aching in the muscles of the left thigh. Restlessness was noted, particularly during the night. One day prior to admission a papular eruption developed about the head, body, and left leg. Increased restlessness and an increase in the rectal temperature from 99 to 100 F (37.2 to 37.8 C) occurred 24 hours prior to admission.

When examined the child held his left leg partially flexed at the hip and knee, and he resisted examination of that part. Clusters of erythematous papules surmounted by small vesicles were present over the left thigh and extended down to involve the great toe. Isolated lesions were noted about the trunk and behind the ears. A clinical diagnosis of herpes zoster was made. A direct smear of cells from the base of the vesicles showed balloon cells. Blister fluid taken from a lesion on the foot was inoculated into a rabbit's cornea, with negative results.

Elevation of the extremities and use of soothing wet dressings gave good symptomatic relief. When the patient was seen approximately a week later, the pain had decreased remarkably and the child again was using his foot. There was beginning involution of the vesicles. Four days later all previous zones of vesiculation were healing, and the patient was active. This patient had had varicella at 8 months of age, but relatively few lesions had been noted. He had not had any recent known contact with children who had varicella.

Comment

Our recent experience belies the impression given by recorded medical literature. Herpes zoster is an infrequent, but not a rare, disease of children. Its infrequent recognition could be explained by its benign clinical course. For this reason, patients so affected may never reach the physician. Because of a low index of suspicion, the eruption is often treated casually as a local cutaneous problem, and its actual nature remains unrecognized.

The cutaneous eruption is comparable to that in the adult. In our experience, the most frequent sites of involvement are the trunk and proximal portion of the extremities. A herpetiform grouping of vesiculobullous lesions, occasionally on an urticarial base, is the most suggestive diagnostic feature. A rapid response to local treatment is typical. In the patient in case 4 the eruption proceeded to gangrene of the skin, after which the area healed, with permanent scarring. Herpes generalisatus occurred in two of our cases, indicating that surface dissemination of the virus may be expected in young patients who have herpes zoster. While the individual lesions were those of varicella, the small number of vesicles, their distribution, and the related clinical course served to separate these clinical entities.

Pain in the cutaneous eruption does occur in children, although typically it is not present. Painful bullae were present in three of our patients, the pain being severe enough to interfere with the normal function of the involved part. Case 7 is an example in which the child would not use the leg but maintained it in flexion; after only a week of local treatment the part was restored to function. Pruritus is rare.

Enlargement of the regional lymph nodes is a consistently associated clinical feature. These nodes usually are freely movable and nontender. Moderate increases in temperature are noted with the more severe degrees of cutaneous involvement. Malaise is present, and one sign most parents recognize is unusual irritability. These associated features were generally present in our patients who had more than the average cutaneous involvement.

The course of herpes zoster in children is uniformly uneventful and extremely short. The clinical problem lasted from two to four weeks in our patients. In adults, the state lasts twice as long and is almost always associated with pain; the complications are more severe.

All the complications of adult herpes zoster may be observed in children under 10 years of age. While it is important to recognize that complications are the rule with increasing age, even the complications in children are benign. The child with severe herpes zoster usually has only an extra week of difficulty.

The cutaneous complications of herpes generalisatus and cutaneous gangrene have been mentioned. The most frequent complication of herpes zoster in the mature patient is postherpetic neuralgia. This is not seen in children. We have not been able to find any authentic case of intractable pain in children. Our patients with painful bullae responded in 24 hours to local treatment. The status in the adult is quite different, and colleagues[4] have shown a great increase in the incidence of postherpetic neuralgia with age, the highest incidence being found in the sixth decade of life. The incidence of complicating persistent pain is high in trigeminal zoster, compared to that involving other nerves.

Some of the so-called complications of herpes zoster represent clinical types of the disease that arise solely as a result of involvement of a specific nerve. The Ramsay Hunt syndrome, due to involvement of the eighth cranial nerve, has been reported in a child.[5] Facial paralysis has been reported by O'Neill,[6] and paralysis of other cranial nerves has been noted by Schmidt and associates.[7] Ophthalmic zoster has been reported more often than involvement of other specific nerves.[8] The rule of Hutchinson, which states that the eye is not involved unless the nasociliary branch of the ophthalmic nerve is affected, holds for children as it does for adults. Severe ocular involvement and blindness are reported only rarely.[9] Muscular paralysis of the eye is said to occur in 7% of cases.[10] We agree with Björk,[8] who said that ocular complications are less frequent in children than they are in adults, and we disagree with Bruce,[10] who stated that ocular complications occur in 50% of cases.

The occurrence of mild meningitic symptoms and pleocytosis, as in the patient in case 6, should not be unexpected.[11] Such a reaction is a complication of many viral diseases in childhood. Schmidt and associates[7] recorded such a case. They also noted cranial nerve involvement, with facial and lingual paresis. The facial weakness persisted for six weeks. Slow-wave changes were seen in the electroencephalogram at the time of the meningitic reaction; two weeks later the recording was essentially normal. A similar simple course was followed by the patient in case 6.

Associated diseases are not found in children. Contrary to the aforementioned statement of Comby that tuberculosis predisposes to the disease and that his patients were rarely in good health, our patients were all in general good health; this agrees with most of the recent authors. Of the 957 patients reported on by de Moragas and Kierland[4] 33 had lymphoma, the most frequently associated disease.

The patients in our cases represented each 12-month period between birth and 5 years of age. Of the seven, five had had varicella by the age of one year. Only one had not had varicella, and this was the 7-month-old child in case 1. It was difficult to obtain a history of exposure to the virus before the onset of the clinical findings; only three of the parents could remember such exposure.

These data emphasize that the relationship between varicella and subsequent herpes zoster is maintained even in childhood. The one exception to this in our group of seven patients was the 7-month-old baby, who might be expected still to have some maternal immunity. No real argument exists today as to the relationship between varicella and herpes zoster. It is unnecessary to postulate the presence of *de novo* herpes zoster to explain the present relationships.

The diagnosis of herpes zoster is principally a clinical one. The association of a typical eruption and course is usually adequate to establish the diagnosis. Balloon cells containing masses of degenerating desoxyribonucleic acid, as shown in figure 2, may be demonstrated in smears stained with Wright's stain, as outlined by Blank and Rake.[12] Study of such smears is a useful office procedure that separates the viral diseases from contact dermatitis and drug eruptions in a simple manner. Further confirmation of the diagnosis may be obtained by cutaneous biopsy, which demonstrates intranuclear acidophilic inclusions. Positive results of the Paul test rule out the varicella-zoster virus. Positive results from injection of vesicle fluid into suckling mice also rule out the varicella-zoster virus.

Treatment for herpes zoster in children is necessary only for the skin. The continuous application of dressings wet with a 0.25% solution of aluminum subacetate, with changes every two to three hours, for 24 to 48 hours will relieve symptoms and dry the vesicles or bullae. If the lesions are asymptomatic a simple lotion, such as starch calamine, may be used. If secondary infection occurs, application of wet dressings or a local antibiotic in a water-soluble ointment or both is satisfactory. Analgesic medicaments usually are not required, since adequate local treatment of the skin will relieve the symptoms. Roentgenologic therapy should not be considered in treating herpes zoster in children.

Summary

Herpes zoster was seen in seven children at the Mayo Clinic; it may be encountered frequently. In children it is a milder disease than it is in adults; it may be asymptomatic but may be recognized by its herpetiform distribution. Balloon cells can be demonstrated easily in the vesicle fluid. With the exception of postherpetic neuralgia all complications of herpes zoster in adults have been observed in children with this disease. Local treatment of the skin is sufficient.

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EARLY DIAGNOSIS OF MULTIPLE PREGNANCY

USE OF ELECTROENCEPHALOGRAPH IN PRENATAL EXAMINATION

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Previous reports of the possibility of using the electroencephalograph for the diagnosis of multiple pregnancies were confirmed in a study of 321 tracings obtained from 295 patients by means of an eight-channel instrument. The stage of pregnancy was an important factor in determining the success of the procedure; in the most favorable period, from the 20th through the 27th week of gestation, the diagnosis of multiple gestations was made without a single error. The earliest positive diagnosis of twins was made at 16 weeks, and an accurate diagnosis of triplets at 20 weeks. Early recognition of multiple pregnancies is important. The convenience and safety of the electroencephalograph make it desirable that this instrument be used more widely for this purpose in obstetrics.

A safe, reliable, and practical method of early diagnosis of twins is basic to our established program of special management designed to avoid the high perinatal mortality commonly associated with multiple gestations. The increasing availability and efficiency of the electroencephalograph prompted us to explore its use in the identification of fetal cardiac activity and the diagnosis of multiple gestations. This report assesses the value of this instrument in the early diagnosis of multiple gestations. Since this study is based on a relatively large group of patients, it offers the further opportunity to define the limits of the technique when applied as a routine part of a prenatal examination.

The electrical activity of the fetal heart has been the subject of sporadic laboratory studies since 1906.[1] Identification of twin QRS complexes was first reported in 1938.[2] The first series (46 tracings) in which the electroencephalograph was used was

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reported in 1942.[3] Blondheim,[4] who reported the second series of cases, stated, however, that Lindsley[5] was the first to use this instrument. In 1955 Bernstine and Borkowski[6] reviewed the literature up to that time and performed a third series with the electroencephalograph. Skemp and Millen[7] added another small series in 1958.

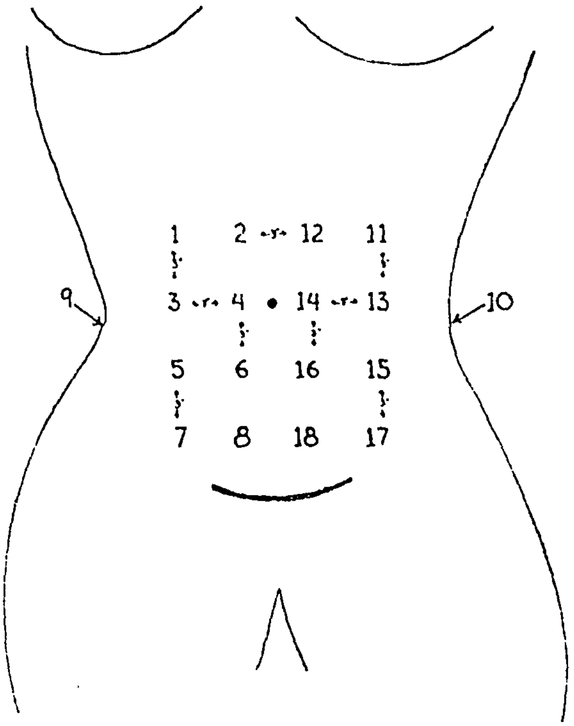

Fig. 1.—Electrode placements in determination of fetal heart activity by means of electroencephalograph.

Although several investigators have reported attempts to record all of the electrical components of fetal heart activity, we have made no attempt to obtain or identify P or T waves nor have we attempted to use the electroencephalograph to diagnose fetal distress. We have used it solely to determine the presence or absence of fetal heart activity and thereby establish the existence of fetal life and the number of fetuses present.

Method

A standard eight-channel Grass model III electroencephalograph was used throughout. This machine is calibrated to yield a 10-mm. deflection per 50-mv. input. Amplification is varied from time to time at the discretion of the technician, usually when the maternal QRS amplitude is too great or fetal deflection is too small. The electrodes are of the silver-disk variety applied to the abdomen with standard bentonite paste (fig. 1). Electrodes 9 and 10 are applied to the right and left flanks in the posterior axillary lines just below the umbilicus. Once the electrodes are applied, multiple combinations are made available by a simple dial adjustment at the main control panel. This permits a systematic search for the fetal heart which is both rapid and efficient. The usual search pattern of leads is conducted according to the following pattern:

1-9	2-9	8-2	1-3	2-4	5-3	5-3	7-5
3-9	4-9	18-12	3-5	4-6	3-4	3-6	5-6
5-9	6-9	8-12	5-7	6-8	4-5	6-5	6-7
7-9	8-9	18-2	11-13	12-14	15-13	15-13	17-15
11-10	12-10		13-15	14-16	13-14	13-16	15-16
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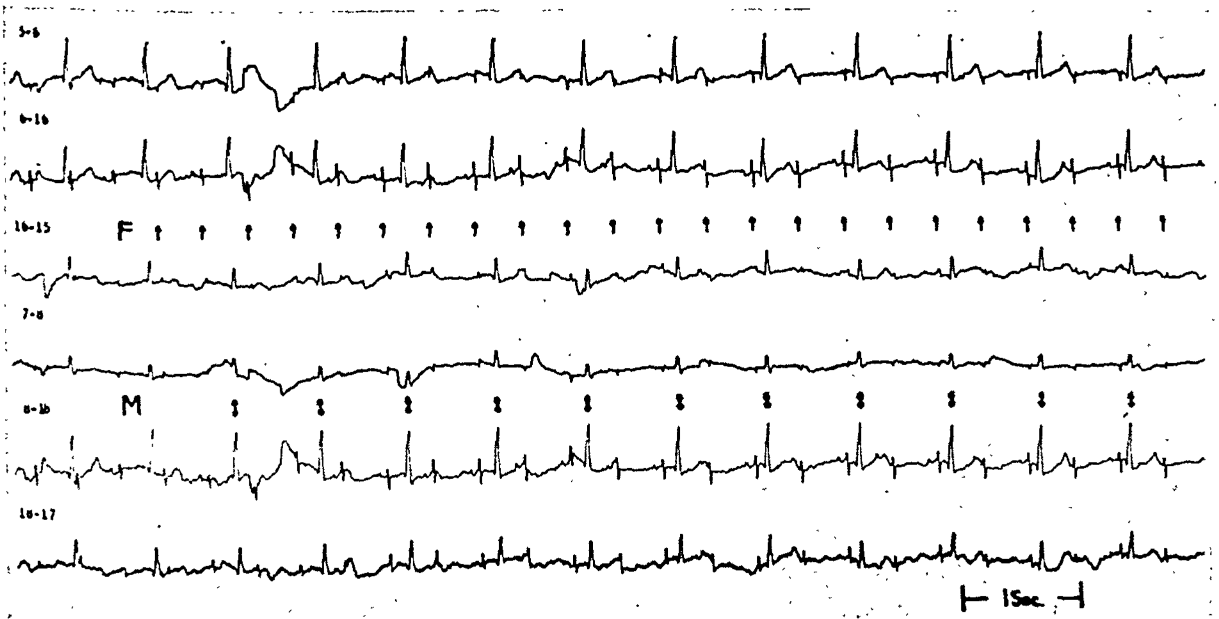

Fig. 2.—Typical electrocardiographic tracing: fetal complexes (F) and maternal complexes (M) identified with arrows.

By this technique fetal QRS complexes are found in some records over a wide area and in others under only one or two electrodes. Leads placed on the back rarely revealed a fetal QRS complex and never disclosed one when the result of an abdominal survey was negative. Hyperventilation for two minutes, in some patients, will help to increase the amplitude of the fetal QRS deflection. Paper speed used is 30 mm. per second.

The criteria employed in the identification of fetal QRS complexes are as follows: (1) a regular rhythm whose rate varies but little within any 10-second period, (2) a uniform appearance of the fetal QRS complexes (fig. 2), and (3) a relatively slower duration of the fetal QRS complex when compared to the sometimes confusing muscle artifact (fig. 3).

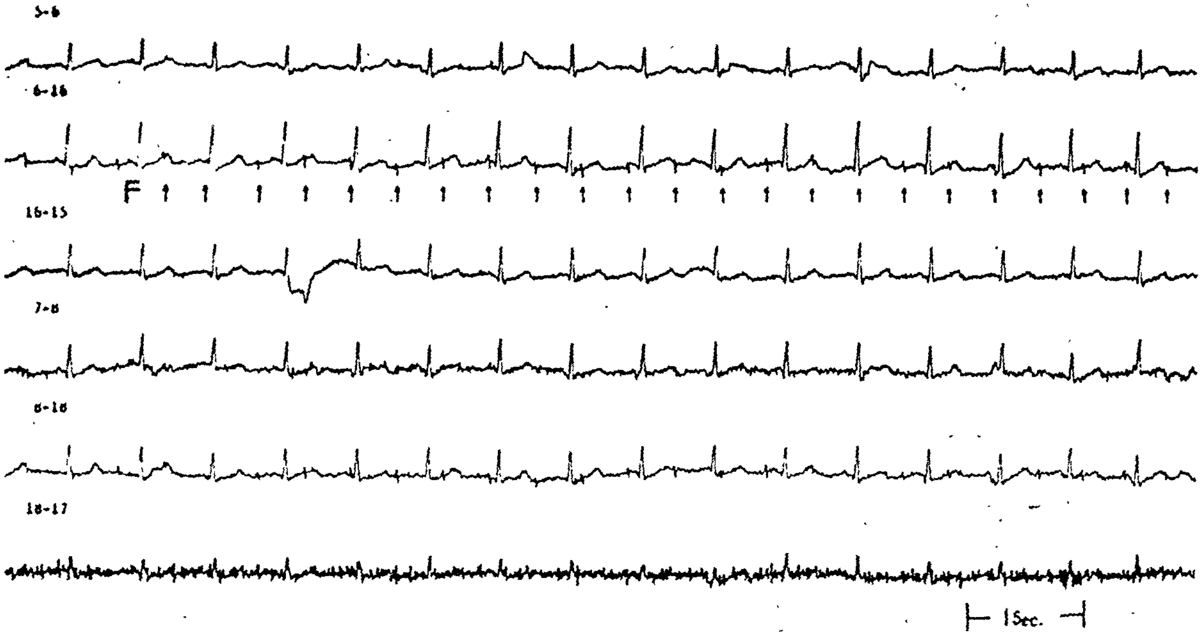

Fig. 3.—Muscle artifact and background "noise" with fetal QRS (F) readily differentiated by criteria given in text.

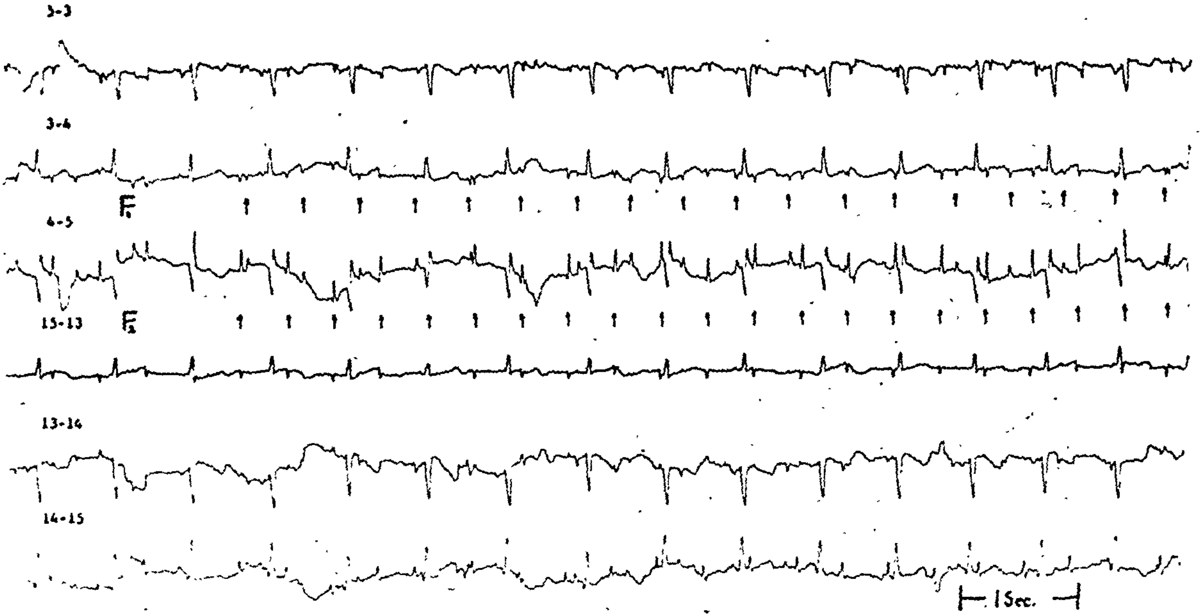

Fig. 4.—Typical appearance of tracings of twin fetal hearts (F1,F2).

Twin complexes share the above criteria for identification. Invariably the fetal heart rates are slightly different, causing their respective QRS complexes to part and meet in a given lead or leads. Further, these complexes rarely have the same configuration due to differences in electrical axes determined by the respective intrauterine positions of the fetuses. A breech presentation is diagnosed when the fetal QRS has the same polarity as the maternal QRS in the tracing from lead 8-2. A vertex presentation is diagnosed when the fetal QRS deflection takes the opposite direction in this lead (fig. 4 and 5).

Results

Three hundred twenty-one tracings were obtained from 295 patients during the period from the 11th to the 40th week of gestation. Twenty tracings were technically unsatisfactory for interpretation. Thirty-eight others failed, for various reasons, to demonstrate fetal heart activity or revealed only one fetal heart when two or more should have been present. All other tracings revealed the appropriate number of fetal QRS complexes or no activity where fetal death had occurred. The period of gestation from the 28th through 35th week proved to be the most difficult time to demonstrate electrical evidence of fetal heart activity, while excellent results were achieved from the 20th to the 27th week. Interpretation of the records occasionally was made difficult by the presence of (1) excessive maternal muscle artifact, (2) excessive fetal activity, (3) poor patient cooperation, (4) failure to empty the maternal bladder, and (5) marked maternal tachycardia. Analysis of our present material has shown that height, weight, age, race, or parity of the patient did not influence the accuracy of diagnosis.

In spite of the above-mentioned difficulties and the random selection of patients for testing between the 11th and 40th week, we have been able to make an accurate diagnosis in 81% of all tracings. Ninety per cent accuracy was found in tracings taken between the 20th and 27th week. Patients with twin gestations were encountered 21 times. One hundred per cent accuracy of diagnosis of multiple gestations was found in the most favorable period, the 20th through 27th week. The earliest positive twin

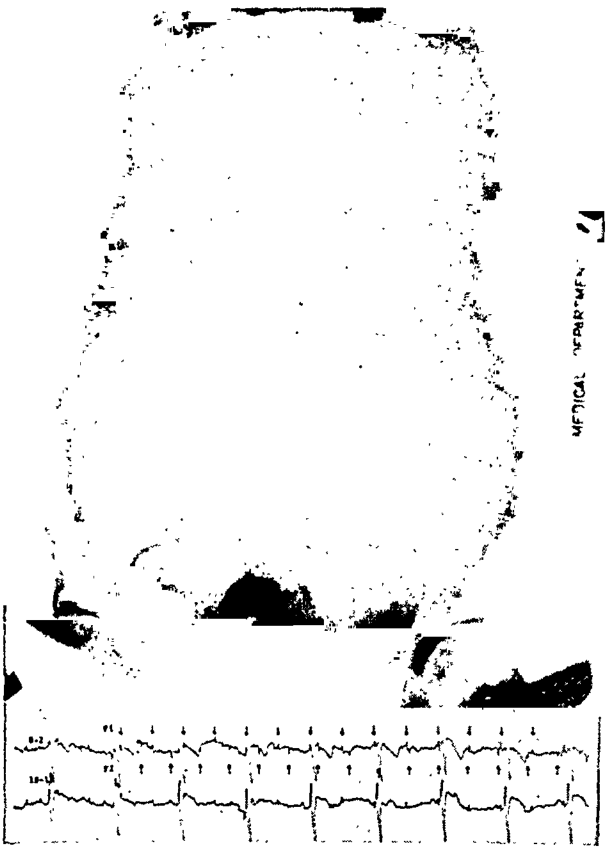

Fig. 5.—Roentgenogram taken within 10 minutes after diagnosis of twins by EEG. Confirmation of presentations diagnosed from electrical tracings.

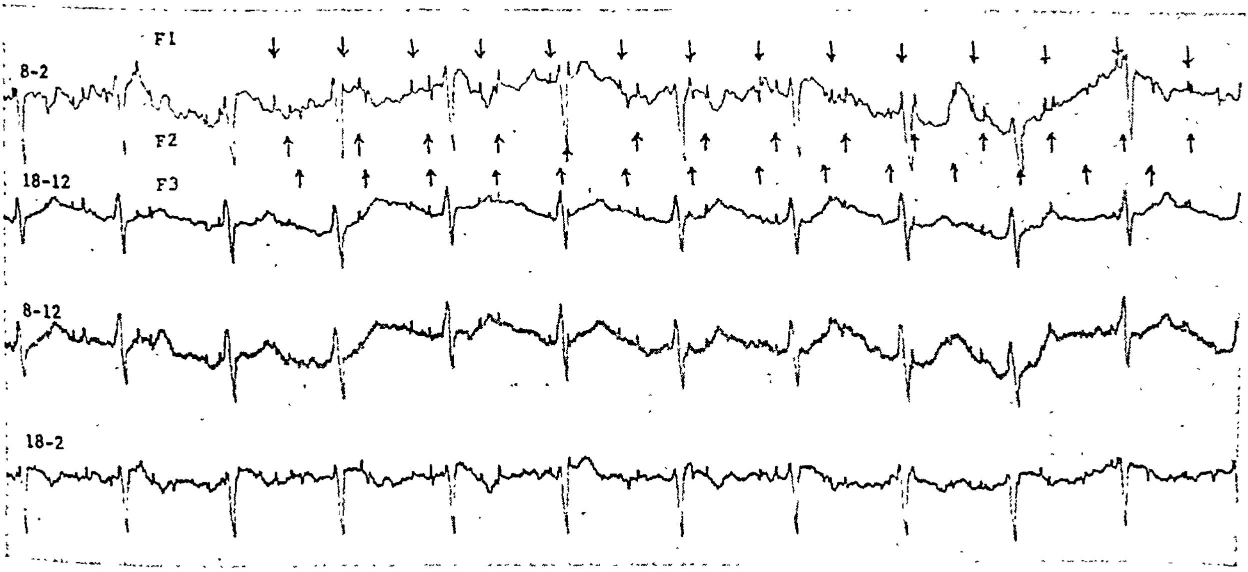

Fig. 6.—Tracing establishing diagnosis of triplets at 20 weeks gestation. Tracing taken two weeks earlier was definite for twins but with suspicion of presence of third fetus. Roentgenogram taken four weeks after electrical diagnosis was inconclusive in making this diagnosis of triplets.

diagnosis was made at 16 weeks. The accurate diagnosis of triplets was easily made at 20 weeks gestation by this method (fig. 6). It was of interest that a single roentgenogram of this patient, taken four weeks later, still was inconclusive for triplets.

Comment

The increase in complications associated with multiple gestation, the desire for early diagnosis, as well as the growing concern for irradiation hazards[8] and our resultant desire to avoid the use of roentgenograms have prompted this investigation. The presence of single or multiple fetal hearts was diagnosed by means of the Grass electroencephalograph. Three hundred twenty-one tracings were obtained from 295 patients. We found that it is possible to make an accurate diagnosis of single or multiple pregnancies or to support the occurrence of fetal death in the vast majority of all patients studied. Ninety per cent accuracy of diagnosis was achieved between the 20th and 27th weeks, the most favorable period for application of this test. One hundred per cent accuracy of diagnosis of multiple gestations was obtained from the 20th through the 27th week of gestation. The test is easily performed by a technician trained in electroencephalography and, as used here, does not require the presence of a physician during the recording. Because of its ease of application, its accuracy and safety, as well as its overwhelming acceptance by patients, the U. S. Naval Hospital, Portsmouth, Va., now employs this test as part of the prenatal routine in all cases of suspected multiple gestation or of intrauterine fetal death.

The opinions expressed in this article are those of the authors and not necessarily those of the Department of the Navy or Department of Defense.

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SURGICAL INDICATIONS IN NONTOXIC NODULAR GOITER.—An analysis of a series of 4,885 private patients, not influenced by institutional selection, is analyzed in an attempt to establish a true cross section of the rapidly changing goiter problem in the Great Lakes' goiter belt. We may be experiencing the passing of an endemic goiter area. Until the early 1940s, the dominating indication for surgery was toxic goiter; only about 12% of thyroidectomies were done for nontoxic nodular goiter. From 1950 to 1958, about 73% of the goiters operated upon were classified as nontoxic types. In our experience, since there is an 11% incidence of cancer in nontoxic nodular goiter, and since the medical literature records an incidence varying from 5% to 30%, the problem becomes disturbing. We are confronted with two schools of thought in the management of nontoxic nodular goiter. (1) Thyroidectomy in all cases. (2) Selection of cases. There is general agreement that large nodular goiters should be removed because of pressure symptoms and for cosmetic reasons. It is also generally agreed that the high incidence of papillary and follicular cancer in asymptomatic nodular goiter in children under the age of 15 years demands thyroidectomy. Routine thyroidectomy in nodular goiter in adults in an endemic goiter area, however, would lead to many unnecessary operations. Cancer of the thyroid is a relatively rare disease. Only 0.5% of deaths from all cancer results from cancer of the thyroid. . . . Furthermore, in this area about 2% of the male and 6% of the female population have asymptomatic nodular goiters. These observations favor selection of cases for operation based on the appearance of a solitary nodule, a rapid lobular increase in size of a goiter, hard irregular nodules, palpable cervical lymph nodes, and any other suspicious changes in the gland.—C. W. Eberbach, M.D., Surgical Indications in Nontoxic Nodular Goiter: A Controversial Problem, *The Wisconsin Medical Journal*, April, 1959.

CLINICAL NOTES

LATEX-AGGLUTINATION SEROLOGIC TEST FOR TRICHINOSIS

PRELIMINARY REPORT

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and
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The complement-fixation test has been in routine use in the First U. S. Army Medical Laboratory for the diagnosis of trichinosis. On occasion the bentonite-flocculation test has also been performed. Recently we have developed an agglutination procedure with latex (polystyrene) particles which promises to be as specific and sensitive, but less laborious, than either the complement-fixation [1] or the bentonite [2] test. The latex test is performed in small volumes in order to conserve reagents and test serum and, because of its simplicity, may be adapted for use in any laboratory. Results obtained in parallel tests with the complement-fixation and latex methods are presented in this report.

Materials and Method

Preparation of Trichinella Extract.—Trichinella (Trichina) extract is prepared by the method of Bozicevich.[2] It is carefully titrated with a number of serums from patients known to have trichinosis. Lack of nonspecific and anticomplementary activity is assessed by testing serum from normal persons and patients with diagnoses of syphilis, Echinococcus disease, tuberculosis, leptospirosis, and rheumatoid arthritis. The extract is freeze-dried in individual vials, in volumes sufficient for one day's tests. The dried extract used for this study has been stored for a period of three years, with no loss of activity.

Complement-Fixation Test for Trichinosis.—The complement-fixation test for trichinosis is a modification [3] of the Kolmer complement-fixation test.[4] Antisheep amboceptor and guinea pig complement, either prepared in this laboratory or obtained commercially, are titrated for a 100% unit of hemolysis, with 2% sheep cell suspension, in a total volume of 0.54 ml. The same total volume is used for the test: 0.04 ml. of serum, 0.1 ml. of antigen extract, and 0.2 ml. of complement. After overnight refrigerator incubation, the test is completed at 37 C by addition of 0.2 ml. of sensitized cells, consisting of one part of amboceptor and one part of 2% sheep cell suspension. Readings are made according to standard methods, by recording 4+ for complete lack of hemolysis, with gradations of 3+, 2+, 1+, and ±, depending on the degree of hemolysis.

Trichinella Latex Particle–Agglutination Test.—Essentially, the Trichinella latex particle–agglutination test is a modification of the diagnostic procedure of Singer and Plotz [5] for rheumatoid arthritis. A stock suspension of latex particles (0.81 μ in size) is prepared in distilled water and then added to Trichinella extract and glycine saline buffer solution; the quantities are as follows: Trichinella extract, 1.0 ml.; saline glycine buffer solution (pH 8.2), 4.0 ml.; and stock solution of latex particles, 0.2 ml. This volume is sufficient for 50 tests. The test is performed in small test tubes (8.5 by 75 mm.), with 0.1 ml. of antigen and 0.1 ml. of serum. After incubation for 30 minutes at 37 C, the tests are cooled at room temperature and then centrifuged at 2,000 rpm for three minutes. Readings are determined by degree of precipitate flocculation as 4+, 3+, 2+, 1+, or ±; the 4+, 3+, and 2+ tests have sparkling, clear supernates, with some cloudiness appearing at the 1+ to ± readings. A negative test is cloudy and there is no agglutination.

Table 1.—*Screening Tests for Trichinosis with Undiluted Serums*

Diagnosis	No. of Cases	Complement-Fixation	Latex-Agglutination
Trichinosis	20	Positive	Positive
Syphilis	10	Negative	Negative
Rheumatoid arthritis	10	Negative	Negative
Echinococciasis	4	Negative	Negative
Normal	50	Negative	Negative

We have used also an antigen control consisting of glycine buffer solution and particles only (without antigen extract), with each serum tested. This is to control nonspecific agglutination of latex particles. No such nonspecific agglutination has been observed to date.

Tests have been performed on lyophilized stored serum, preserved with thimerosal (Merthiolate) from known cases of trichinosis; on preserved, lyophilized, or stored serum from persons with syphilis, rheumatoid arthritis, and Echinococcus

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disease; and on preserved lyophilized, stored and fresh serum from persons considered to be normal controls. The complement-fixation and latex particle–agglutination tests were performed on undiluted serums and all positive reacting serums were titrated in both methods. Results obtained in all tests with undiluted serums are recorded in table 1, and titrations of all reacting serums in table 2.

Comment

The results recorded in table 1 indicate that the degree of specificity obtained in the latex test for trichinosis remarkably parallels that obtained by the complement-fixation test performed in this laboratory. In tests for sensitivity (table 2) the latex test is at least as sensitive as the complement-fixation test and, in most cases, more sensitive. While it is realized that this study is incomplete in that serums from persons with parasitic infestations such as strongyloidiasis, filariasis, and schistosomiasis and fresh serums from Trichinella-infected or possibly infected persons have not been included, these preliminary tests are encouraging. Complement-fixation tests are informative, but well-trained technicians are needed and, unless the test is performed in copious numbers, reagents are expensive and the procedure is time-consuming. The bentonite-flocculation test was not used in this study, but past experience with it in this laboratory proves it to be more laborious and much more subjective in interpretation than the latex-agglutination test. Once an antigen extract has been prepared, it is extremely simple to perform the latex-agglutination test for trichinosis. Antigen extracts can be prepared in large quantities, lyophilized, and used over long periods of time, without loss of activity. As previously mentioned, the extract used in this study was prepared and lyophilized three years ago. The volumes of serum and reagents used for the latex test are extremely small (0.1 ml.), rendering it suitable for both diagnostic and epidemiologic studies.

TABLE 2.—*Titration of Serums Reacting in Tests for Trichinosis*[*]

Serum No.	Test	Undiluted	1:2	1:4	1:8	1:16	1:32	1:64	1:128	1:256	1:512
CDC 3	C.F.[†]	4	4	3	3	1	—	—	—	—	—
	Latex	4	4	4	4	4	3	2	1	—	—
138	C.F.	4	4	4	2	1	±	—	—	—	—
	Latex	4	4	4	4	2	1	±	—	—	—
536	C.F.	2	1	—	—	—	—	—	—	—	—
	Latex	4	4	4	3	1	—	—	—	—	—
431	C.F.	3	—	—	—	—	—	—	—	—	—
	Latex	2	±	—	—	—	—	—	—	—	—
444	C.F.	4	4	4	4	4	4	4	±	—	—
	Latex	4	4	4	4	4	4	4	4	4	3
119	C.F.	4	4	4	4	3	±	—	—	—	—
	Latex	4	4	3	2	2	1	±	—	—	—
678	C.F.	AC[‡]	AC[‡]	4	4	4	4	4	4	4	4
	Latex	4	4	4	4	4	4	4	4	2	1
176	C.F.	4	4	4	4	4	4	4	4	3	—
	Latex	4	4	4	4	4	4	4	4	3	3
96	C.F.	4	4	4	±	—	—	—	—	—	—
	Latex	4	4	4	4	4	3	2	1	—	—
677	C.F.	4	4	4	4	4	4	2	—	—	—
	Latex	4	4	4	4	4	4	3	3	2	—
WR 90358	C.F.	4	4	4	4	3	±	—	—	—	—
	Latex	4	4	4	4	3	2	1	—	—	—
93054	C.F.	4	4	4	4	±	—	—	—	—	—
	Latex	4	4	4	4	4	3	±	—	—	—
111858	C.F.	4	4	4	4	4	4	4	±	—	—
	Latex	4	4	4	4	4	4	2	2	±	—
120957	C.F.	4	4	4	4	4	4	4	4	±	±
	Latex	4	4	4	4	4	4	4	4	2	1
70358	C.F.	4	4	4	4	4	±	—	—	—	—
	Latex	4	4	4	4	4	4	1	±	—	—
NJ E.L.T.	C.F.	4	4	4	4	2	—	—	—	—	—
	Latex	4	4	4	4	4	4	2	±	—	—
L.O.	C.F.	4	4	4	4	3	2	—	—	—	—
	Latex	4	4	4	3	2	1	—	—	—	—
M.Du.	C.F.	4	4	4	4	3	2	—	—	—	—
	Latex	4	4	4	3	2	1	—	—	—	—
M.Do.	C.F.	4	4	4	4	4	3	—	—	—	—
	Latex	4	4	4	3	1	—	—	—	—	—
L.O.	C.F.	4	4	4	4	4	3	±	—	—	—
	Latex	4	4	4	4	2	1	—	—	—	—

[*] Within the indicated range of precipitate flocculation, cloudiness begins to appear at 1+ to ±.
[†] C.F.: Complement-fixation test.
[‡] AC: Anticomplementary in complement-fixation tests.

The latex test was performed both in the tube, as described, and on a slide. Results of both tests were the same. For the slide test, latex particles of larger size are necessary, however, and a more concentrated Trichinella extract must be used. The tube test is preferred in this laboratory, both because it permits a conservation of antigen extract and because the latex particles of 0.81 μ size are also used in this laboratory for tests for rheumatoid arthritis. The test has been performed in various volumes from 0.1 to 1.0 ml., with no change in reactivity. However, for dispensary laboratories and doctors' offices where small-size tubes, water baths, and centrifuges may not be available and for epidemiologic purposes, the slide test, simply performed with one drop of latex Trichinella antigen mixed with one drop of serum, is an advantage. It is believed that the latex Trichinella antigen will lend itself well to commercial preparation.

Summary

The latex test is a simple serologic test for trichinosis, in which Trichinella (Trichina) extract, as the antigen, and latex (polystyrene) particles are used. In parallel tests with a number of serums from known cases of trichinosis and other pathological and normal serums, the latex test has been shown to be as specific and as sensitive as the complement-fixation test, and, in some cases, more sensitive.

Although described here as a tube test, the latex test may also be performed on slides. The simplicity and ease with which it can be performed render it useful for small laboratories for diagnostic purposes and for large-scale epidemiologic studies.

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The latex particles were obtained from the Dow Chemical Company, Midland, Mich.

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FATAL JAUNDICE AFTER ADMINISTRATION OF BETA-PHENYLISOPROPYLHYDRAZINE

REPORT OF A CASE

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and
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The therapeutic usefulness of iproniazid prompted the search for related compounds when hepatotoxicity was reported.[1] One of the newer analogues developed is beta-phenylisopropylhydrazine (Catron), and the following case represents a hepatic reaction with a fatal outcome after its administration.

A 65-year-old woman entered the Mount Sinai Hospital with a one-week history of jaundice. The patient, who had severe hypertension, had previously taken many drugs. Six weeks prior to admission she was given 18 mg. a day of beta-phenylisopropylhydrazine for two weeks; then therapy was maintained with 12 mg. a day in addition to chlorothiazide and reserpine. Her blood pressure of 240/120 mm. Hg, which was unresponsive to treatment with chlorothiazide, hydralazine, ganglionic blocking agents, and reserpine, was reduced to 160/90 mm. Hg after two weeks of beta-phenylisopropylhydrazine therapy, and she was symptomatically better. During the week preceding admission, after a total dose of about 600 mg. of beta-phenylisopropylhydrazine, she noted dark urine, light stools, and progressively increasing lethargy, about which she neglected to tell her physician.

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She continued to take her medicaments in the prescribed amounts. When seen by her physician on the day of admission, she was deeply icteric and was hospitalized immediately. Her history was significant only in that severe hypertension had been present for 15 to 20 years. She had had a transient cerebrovascular accident five years prior to admission and an episode of myocardial ischemia one year prior to admission. She had no history of previous liver disease and was not known to have been exposed to hepatitis or known hepatotoxic agents.

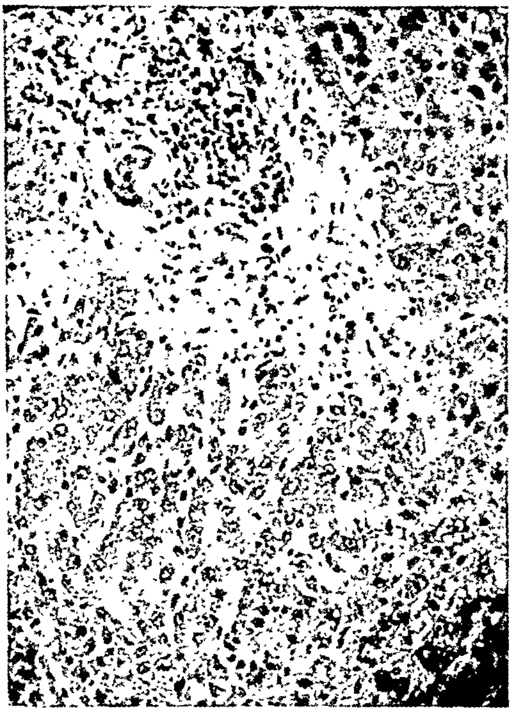


Fig. 1.—Postmortem needle biopsy specimen of liver, showing area of massive necrosis around portal tract (hematoxylin-eosin stain, × 120).

On admission to the hospital, she was lethargic and deeply icteric, with a strong fetor hepaticus. Vital signs were within normal limits. Blood pressure was 150/90 mm. Hg. In addition to lethargy and icterus, a flapping tremor was present and a soft, nontender liver was felt 2 cm. below the right costal margin. The spleen was not palpable. The remainder of the examination was within normal limits. The hemoglobin level was 13.8 Gm.%; the white blood cell count was 14,750 per cubic millimeter, with 88% polymorphonuclear leukocytes, 4% band forms, 5% lymphocytes, 1% eosinophils, 1% basophils, and 1% monocytes. The urine had a specific gravity of 1.020 and contained a trace of albumin, no sugar or acetone, and occasional red and white blood cells. The blood urea nitrogen level was 21 mg.%, and the serum cholesterol level was 310 mg.%, with 215 mg.% esterified. The serum bilirubin level was 22.2 mg.%, with 15 mg.% conjugated. The total serum protein level was 7.6 Gm.%, with albumin 3.2 Gm.% and globulin 4.4 Gm.% The serum alkaline phosphatase activity was 28 King-Armstrong units; serum glutamic oxalacetic transaminase (SGO-T) level was 465 units; prothrombin time was 33 seconds (control 12.5 seconds). The electrocardiograph showed nonspecific T-wave abnormalities.

The patient received steroids intravenously and vitamin K parenterally and was given neomycin by stomach tube and enemas. Despite these measures, her condition deteriorated; she gradually became comatose and died three days after admission.

Biopsy of the liver was obtained with a Vim-Silverman needle after death. Autopsy was not performed. The liver architecture was generally intact. Large areas of necrosis were seen in which liver cells had disappeared and collapse of the stroma was beginning (fig. 1 and 2). Many inflammatory cells, predominantly polymorphonuclear leukocytes, were present in the necrotic areas and in the portal tracts. In the regions of remaining parenchyma, the liver cells showed considerable variation from cell to cell with vacuolization of cytoplasm and differences in nuclear staining. Severe bile stasis was present. Occasional acidophilic bodies were noted. The Kupffer cells were proliferated and contained much polysaccharide, which stained with the periodic acid–Schiff reaction after diastase digestion. Numerous proliferating ductules were noted, especially in the areas of necrosis; in

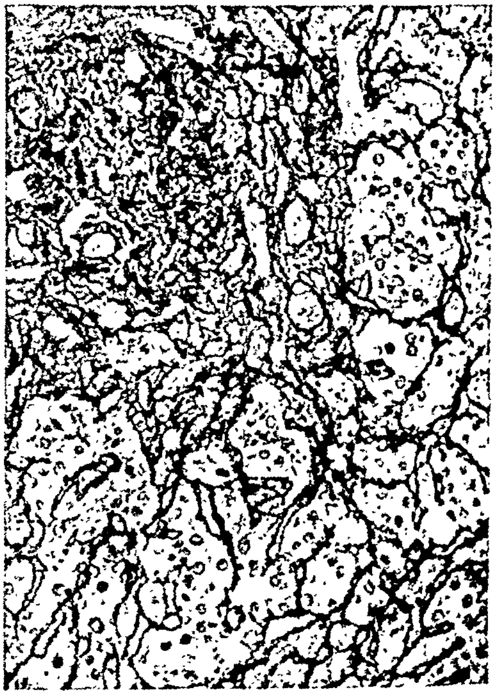
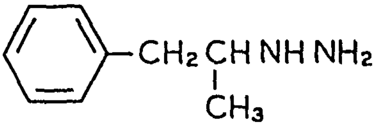


Fig. 2.—Same area as shown in figure 1, showing collapse of reticulum framework in necrotic zone (Gomori silver impregnation, × 120).

the same areas the reticulum appeared to be condensed. The central veins were the site of a rather severe phlebitis.

Comment

Beta-phenylisopropylhydrazine is a congener of amphetamine and is structurally represented as shown below.



It is a hydrazine derivative. Two functions have been ascribed to this drug: first, monoamine oxidase inhibition and, second, a dihydroxyphenylalamine (DOPA)–decarboxylase coenzyme inhibition. Its total effect is dependent on which enzyme inhibition predominates. As a monoamine oxidase inhibitor in the brain, it is 50 times more potent than iproniazid, although in the liver it is about equal to iproniazid.[2] It is longer acting than iproniazid, e. g., one dose exerts an effect for several days.[3] It is known to potentiate the action of other drugs such as tranquilizers and amphetamine.[4] Beta-phenylisopropylhydrazine has been used in treatment of mental depression, angina pectoris, rheumatoid arthritis, and experimentally in hypertension. Agin[5] reports no signs of toxicity in a group of patients with psychoneurotic and involutional disorders given 12 mg. a day, as measured by blood counts, urinalysis, and various hepatic tests; over a three-month period there was clinical improvement generally characterized by elevation of mood.

In hypertension equally gratifying results, without toxicity, are reported with doses of 6.25 to 25 mg. per day of the drug for at least two months.[6] Doses of 25 mg. daily until blood pressure is controlled, with maintenance at 6 to 12 mg. daily, are suggested by some.[7] Although the manufacturer states that the use of the drug in hypertension is on an experimental basis and the daily dose should never exceed 12 mg. a day, the patient reported here received 18 mg. a day initially and continued taking the drug for a week after jaundice had appeared. While none of the currently available hepatic tests seems to be of value in predicting the appearance of jaundice, alteration of the results of any of them, particularly serum bilirubin or transaminase, during therapy should be followed by immediate cessation of use of the drug.

Popper[1a] described pathological findings in the liver in 27 cases of jaundice associated with iproniazid therapy. Changes in appearance of the liver were identical to changes seen in viral hepatitis. Several other unrelated drugs have been reported to produce the same type of hepatitis-like picture.[8] The characteristic feature of jaundice produced by any of these drugs is a low incidence but a high mortality. The clinical findings, the course, and the laboratory data in the present case are also the same as in iproniazid jaundice and in severe viral hepatitis. This suggests the possibilities that the hepatic reaction is the result of a coincidental viral hepatitis, that the drug aggravated a preexisting or carrier stage of hepatitis, or that this represents an exceptionally occurring hepatic hypersensitivity reaction. The findings in a single case do not permit the selection of the most likely possibility. The present case is reported to alert physicians to the fact that a viral hepatitis-like picture may develop during administration of this drug and that such cases should be documented in the attempt to establish a causal relationship.

Summary

A fatal case of jaundice resembling viral hepatitis developed in a patient after administration of about 600 mg. of beta-phenylisopropylhydrazine over a six-week period. The clinical, laboratory, and pathological findings in the liver were the same as those in jaundice caused by iproniazid and were indistinguishable from severe viral hepatitis. Documentation of similar cases is needed to establish a causal relationship between the drug and hepatitis.

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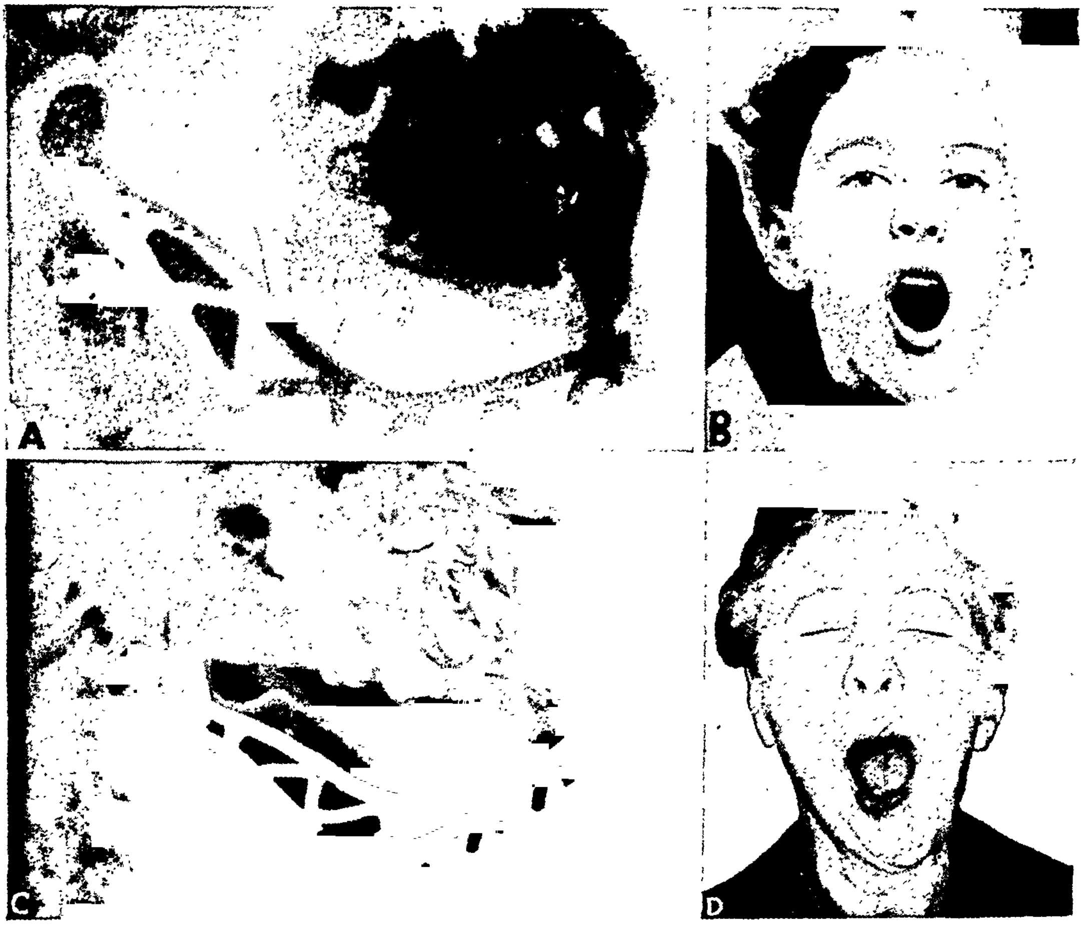
SILVER IMPLANT IN SITU FIFTY-ONE YEARS AFTER RESECTION OF MANDIBLE

Marsh Robinson, D.D.S., M.D., Santa Monica, Calif.

A 61-year-old housewife was referred on March 26, 1958, to my office because a roentgenogram taken by her dentist showed an angular fracture of her left metal mandible. She had no complaints. Her history revealed that at 11 years of age she developed an extraoral protuberance. Her family doctor incised the protuberance, which yielded black blood. The wound healed and she was referred to Dr. John B. Murphy in Chicago. In March, 1908, Dr. Murphy removed [1] her left mandible and inserted a metal jaw. The reason for the resection was that "a giant cell sarcoma had attacked the angle of the right half of the mandible." The external incision continued to drain until January of 1909, when the lower portion of the metal jaw was removed. Within two weeks the drainage stopped. She had no difficulty with her jaw until about eight years ago. At that time a lower tooth was removed while she was under general anesthesia and she thought the metal jaw broke. This caused her no difficulty except she felt that her lower teeth did not fit properly against the upper teeth.



A and *B*, roentgenogram and photograph of patient with massive silver implant. Note "freedom of motion of jaw with only slight flattening of cheek on right side."[1] *C* and *D*, roentgenogram and photograph of same patient 51 years after implant was placed. *Note fracture of metal in area of mandibular angle.* (*A* and *B* reproduced from Murphy.[1])

3003 Santa Monica Blvd.

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Professor of Oral Surgery, University of Southern California School of Dentistry, and Clinical Professor of Surgery (Oral), University of Southern California School of Medicine.

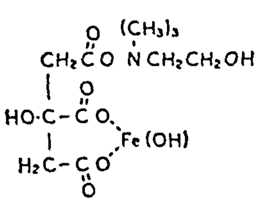
COUNCIL ON DRUGS

NEW AND NONOFFICIAL DRUGS

The following descriptions of drugs are based on available evidence and do not in any case imply endorsement by the Council.

H. D. Kautz, M.D., *Secretary.*

Ferrocholinate (Chel-Iron, Ferrolip).—Iron choline citrate chelate.—A chelate prepared by reacting equimolar quantities of freshly precipitated ferric hydroxide with choline dihydrogen citrate. The structural formula of ferrocholinate may be represented as follows:



Actions and Uses.—Ferrocholinate is a hematinic agent which is used for the treatment of iron deficiency anemias. The iron of this preparation is present in a chelated form; *i. e.*, the metallic ion is sequestered and firmly bound into a ring within the chelating molecule. This process apparently alters its toxic properties and the diffusion of the iron into the circulation. Thus, although ferrocholinate is much more soluble in water and digestive juices than either ferrous sulfate or ferrous gluconate, its acute toxicity is less. For example, doses of 200 to 250 mg. of elemental iron per kilogram of body weight, as the sulfate or gluconate, are fatal to rabbits and dogs, but the same dose of elemental iron as ferrocholinate is well tolerated in these animals. In addition to a lower acute toxicity, ferrocholinate also causes less gastrointestinal ulceration, vomiting, diarrhea, and weight loss in animals than does the same dose of iron as ferrous sulfate or ferrous gluconate.

Ferrocholinate is proposed for oral administration in the prevention and treatment of microcytic, hypochromic anemias due to iron deficiency. Such anemias may be the result of deficient iron intake, excessive loss of iron as in hemorrhage or heavy menstrual flow, or in infancy or pregnancy in which the demand for hemoglobin is increased. Clinical experience with ferrocholinate for any of these conditions has been very limited to date. Although preliminary studies would suggest that hematological responses are comparable to those previously attained from other iron preparations, more clinical experience is necessary to substantiate the ultimate usefulness of ferrocholinate as a hematinic agent.

The available clinical evidence, although meager, would appear to bear out the results of the laboratory toxicity experiments; that is, ferrocholinate seems to be better tolerated in the therapeutic dosage range than are ferrous sulfate and ferrous gluconate. In the small number of patients so far observed, complaints were limited to mild nausea, diarrhea, or constipation. These complaints tended to disappear on continuation of therapy, and in no case were they so severe as to require discontinuance of medication.

On the basis of these laboratory and clinical observations, ferrocholinate may have an advantage over other orally administered iron preparations from the standpoint of tolerance and danger of acute toxicity after overdosage. In terms of clinical efficacy, however, present evidence is inadequate to warrant such comparisons.

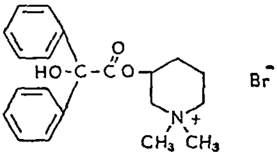
Dosage.—Ferrocholinate is administered orally. For adults and children over six years of age, the proposed dose is 330 to 660 mg. three times daily. This amount supplies 120 to 240 mg. of elemental iron per day. For infants and children under six years of age, the proposed maintenance dose is 104 mg. (12.5 mg. of elemental iron) once a day; therapeutic dosage for such patients should be determined by the physician according to the severity of anemia present. Pending more clinical evidence to support the usefulness of ferrocholinate, the foregoing doses must be regarded as tentative.

Preparations.—solution (oral) 208 mg. per cc.; syrup 33.2 mg. per cc.; tablets 330 mg.

Year of introduction: 1958.

Flint, Eaton & company cooperated by furnishing scientific data to aid in the evaluation of ferrocholinate.

Mepenzolate Methylbromide (Cantil).—1-Methyl-3-piperidyl benzilate methylbromide.—The structural formula of mepenzolate methylbromide may be represented as follows:



Actions and Uses.—Mepenzolate methylbromide is an anticholinergic compound that has been used chiefly for the relief of spasm and hypermotility associated with diseases of the lower gastrointestinal tract.

There is convincing evidence in experimental animals that mepenzolate methylbromide, in common with other atropine-like agents, is highly active and relatively specific in antagonizing the effects of acetylcholine. It inhibits both spontaneous and chemically induced intestinal contractions. Reports differ on its relative effects on various segments of the gastrointestinal tract, but there is some evidence that it has a more pronounced and prolonged spasmolytic effect on the colon than on the higher portions of the gastrointestinal tract. It causes relaxation of the sphincter of Oddi and suppresses pancreatic secretion. Its actions on other organ systems are also typical of cholinergic blocking agents.

In human subjects, mepenzolate methylbromide inhibits the motility of the small intestine and, to a lesser degree, that of the stomach. The evidence concerning its effect on the colon is conflicting, some reports indicating a more significant reduction of colon motility than of the small intestine. It is reported to produce a definite reduction in the free hydrochloric acid and total volume of gastric secretion.

Mepenzolate methylbromide has proved useful in relieving the abdominal pain, gaseous distention, and diarrhea associated with diseases of the colon. It is more effective in functional conditions, such as the irritable bowel syndrome or spastic colon, in which it has been reported to be as effective as atropine and to compare favorably with the more acceptable synthetic anticholinergic agents. It may also provide some symptomatic improvement when used as an adjunct in the management of ulcerative colitis, regional ileitis, infectious diarrheas, and other inflammatory diseases of the intestinal tract.

Side-effects that have been observed include dryness of the mouth, blurred vision, dizziness, headache, and constipation. These may frequently be satisfactorily controlled by reducing the dosage. Difficulty of urination and urinary retention in the presence of prostatic hypertrophy are claimed to occur less frequently with mepenzolate methylbromide than with other anticholinergic drugs; these complications have, nevertheless, been reported.

Mepenzolate methylbromide is contraindicated in the presence of glaucoma, pyloric obstruction, and cardiospasm. It should be used with great caution in the presence of prostatic hypertrophy.

Dosage.—Mepenzolate methylbromide is administrated orally. The optimal dosage should be carefully determined for each individual patient. For initiating therapy, 25 mg. four times daily may be tried. If the response is unsatisfactory, the dosage may be gradually increased until the desired therapeutic effect is obtained or until untoward symptoms intervene.

Preparations.—tablets 25 mg.

Year of introduction: 1956.

Lakeside Laboratories, Inc., cooperated by furnishing scientific data to aid in the evaluation of mepenzolate methylbromide.

Parenteral Use of Methylphenidate (Ritalin) Hydrochloride

The Council has reviewed the available scientific evidence relating to the usefulness and safety of methylphenidate hydrochloride when administered by the subcutaneous, intramuscular, and intravenous routes. The oral use of this central nervous system stimulant has been described previously. (See the monograph on methylphenidate hydrochloride in New and Nonofficial Drugs.) Owing to a more rapid onset of action, the injectable form of the drug is better suited for use in emergency situations in which a prompt cortical stimulating effect is desired. Parenteral therapy is indicated also in patients who, for various reasons, may be unable to take oral medication and for uncooperative patients in whom it is important to assure that a full dose is received and retained. Presently available evidence indicates that parenterally administered methylphenidate (10 mg. one to three times daily or as a single dose of 20 to 30 mg.) is useful in overcoming the drowsiness and lethargy sometimes produced by phenothiazine derivatives, rauwolfia alkaloids, barbiturates, anticonvulsants, and other sedative drugs. It may also be tried (30 to 50 mg. every 30 minutes as indicated), along with the usual supportive measures, for counteracting the signs and symptoms of acute overdosage of such agents. The drug has likewise been given parenterally (10 to 30 mg.) in the immediate postoperative period to hasten recovery from surgical and dental barbiturate anesthesia. As with the oral form of the drug, parenterally administered methylphenidate (10 to 20 mg.) can be used as a psychomotor stimulant in depressed, withdrawn, regressed individuals as a means of improving mood and behavior and for stimulating verbalization during psychiatric interviews. The dose for the latter purpose is 10 to 20 mg., given intramuscularly 10 to 15 minutes before the interview.

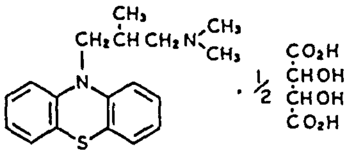
Whereas significant increases in blood pressure and pulse rate are rare when methylphenidate is administered orally, these occur not infrequently when the drug is given parenterally, especially by the intravenous route. Hence, parenteral therapy should be approached cautiously in patients with hypertension. In all patients, blood pressure should be checked before, and at frequent intervals after, each dose is injected. Other side-effects to the parenterally administered drug include occasional instances of nervousness, insomnia, anorexia, dizziness, palpitation, headache, nausea, and vomiting. Methylphenidate is contraindicated in patients with hyperexcitability and agitation and should be used cautiously in those with epilepsy.

Methylphenidate hydrochloride may be injected either subcutaneously, intramuscularly, or intravenously, the route chosen depending principally on the speed with which cortical stimulation is desired. Solutions for parenteral injection should be freshly prepared from the lyophilized powder, using the special solvent provided with each vial of the drug. Such solutions are pharmaceutically incompatible with a barbiturate or strongly alkaline solution and should not be injected through tubing or a syringe containing these agents.

The Council voted to amend New and Nonofficial Drugs to describe the parenteral use of methylphenidate hydrochloride.

Ciba Pharmaceutical Products, Inc., cooperated by furnishing scientific data to aid in the evaluation of the parenteral use of methylphenidate hydrochloride.

Trimeprazine Tartrate (Temaril).—10-(3-Dimethylamino-2-methylpropyl)phenothiazine tartrate.—The structural formula of trimeprazine tartrate may be represented as follows:



Actions and Uses.—Trimeprazine tartrate is a phenothiazine compound which is structurally and pharmacologically related to promazine. It is identical in chemical structure to promazine except for the 2-methyl substituent in the propyl chain. As may be expected, trimeprazine exerts most of the actions of the phenothiazine derivatives, such as depression of the central and sympathetic nervous systems and counteraction of histamine. However, some of these actions, especially the antiemetic, hypotensive, and potentiating effects, are not as prominent as with other phenothiazine derivatives. On the other hand, the histamine-antagonizing action of trimeprazine is, depending upon the test and mode of administration, from one and one-half to five times as potent as that of promethazine, which is closely related chemically to trimeprazine.

Pharmacological studies in animals indicated possible areas of usefulness for trimeprazine in the treatment of allergic disorders and mental or emotional states. During early clinical testing, however, it became apparent that trimeprazine, in low dosage, exerted antipruritic action which was more pronounced than any of its other effects. Clinical evaluation demonstrated that trimeprazine was effective in relieving pruritus accompanying dermatoses of allergic, inflammatory, metabolic, hemovascular, and psychic origins. In addition, it was found useful in those dermatoses, such as dermatitis herpetiformis, whose etiology is not clearly understood. Although its mode of action is not known, trimeprazine appears to exert an antipruritic effect that is not directly related to its histamine antagonism or to its tranquilizing or sedative actions. Accordingly, trimeprazine has been recommended exclusively for the symptomatic treatment of mild and severe pruritus, whether acute or chronic. It often relieves itching which is not relieved by other therapies, and, in many cases, the administration of trimeprazine permits the reduction or elimination of concomitant topical and systemic medication. Presumably, this is made possible by interrupting the itch-scratch-itch cycle, which encourages healing of lesions.

In general, all of the precautions applicable to other phenothiazine compounds, such as promethazine and chlorpromazine, should be observed when using trimeprazine. Mild and transient drowsiness is the most frequently encountered side-effect; however, it disappears, in most cases, after several days of medication. The drug has not been shown to cause jaundice, but one case of agranulocytosis has been reported; no difficulty was encountered in reversing this disorder. Because such serious side-effects are seen with some phenothiazine derivatives, even though infrequently, patients receiving trimeprazine should be watched for their possible appearance. Since virtually all reported cases of agranulocytosis associated with administration of phenothiazine compounds have occurred between the fourth and tenth weeks of treatment (including the case just cited), patients on prolonged therapy should be observed particularly during that period.

Dosage.—Trimeprazine tartrate is administered orally. Dosage should always be adjusted according to severity of the symptom and the response of the patient. The usual daily dosage for adults is 2.5 mg. four times daily or 5 mg. (as a sustained release capsule) every 12 hours. Resistant cases may require up to 30 or 40 mg. daily (nonambulatory patients with severe itching have received as much as 80 mg. in 24 hours with no ill-effects). The usual daily dosage for children up to the age of 2 years is 1.25 mg. at bedtime or, if needed, 1.25 mg. three times daily. Severe or refractory cases may require 1.25 mg. four times daily. The usual daily dosage for children 2 to 12 years of age is 2.5 mg. at bedtime or, if needed, 2.5 mg. three times daily. Severe or refractory cases may require 2.5 mg. four times daily. Total daily dosage should not exceed 5 mg. for children up to 2 years of age or 10 mg. for children 2 to 12 years of age. When itching is a nighttime problem, for adults or children, larger doses (5 or 10 mg.) should be administered at bedtime, with daytime dosage adjusted accordingly.

Preparations.—capsules (sustained release) 5 mg.; syrup 0.5 mg. per cc.; tablets 2.5 mg.

Year of introduction: 1958.

Smith Kline & French Laboratories cooperated by furnishing scientific data to aid in the evaluation of trimeprazine tartrate.

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DRUG-INDUCED HEMOLYTIC ANEMIA

DRUGS that are innocuous to many patients result in untoward reactions in a few sensitive persons. Such reactions, when they involve the blood, are particularly serious. Most investigators have focused attention on immune mechanisms and have searched extensively for antibodies in sensitive patients. In a few instances antibodies have been implicated clearly in drug reactions affecting the blood,[1] but more often this approach has been unrewarding. Recently, a new mechanism of drug sensitivity has become apparent. Biochemical investigations of drug-induced hemolytic anemias have clarified the mechanism of sensitivity in this disorder. At the same time, the pathogenesis of favism has been at least partly elucidated. These studies have recently been reviewed in detail.[2]

The hemolytic effect of the antimalarial drug, primaquine, was studied in many volunteer subjects. By means of cross-transfusion experiments with red blood cells labeled with radioactive chromium (Cr^{51}) it was established that sensitivity to this drug is due to an intrinsic abnormality of the red blood cell. These abnormal red cells were found to be also uniquely sensitive to the hemolytic effect of a variety of other drugs including acetanilid, sulfanilamide, acetophenetidin (Phenacetin), naphthalene, nitrofurantoin (Furadantin), and, in very large doses, even aspirin. Only the older members of the red blood cell population were susceptible to hemolysis. Thus, hemolytic anemia induced by primaquine was self-limited: even if drug administration was continued, the hemoglobin level returned to normal. Since young erythrocytes are metabolically more active than older ones, attention was focused on biochemical processes in the erythrocytes. It was discovered that the concentration of the tripeptide sulfhydryl compound glutathione (GSH) in the red blood cells of sensitive subjects was substantially reduced. When drug-sensitive, GSH-deficient cells were incubated with acetylphenylhydrazine, much of the remaining GSH was changed to oxidized glutathione (GSSG). No such change occurred with nonsensitive red blood cells. This finding formed the basis of a relatively simple in vitro test for drug sensitivity, the glutathione stability test.[3] Furthermore, attention was drawn to the metabolic pathways important in the maintenance of glutathione in the reduced state. Investigations of these pathways resulted in the demonstration that red blood cells of susceptible persons are deficient in activity of the enzyme glucose-6-phosphate dehydrogenase.[4] This enzyme catalyzes the first step in the oxidation of glucose by the red blood cell. In the absence of this enzyme the red cell is unable to reduce triphosphopyridine nucleotide (TPN), the coenzyme most effective in maintaining glutathione in its reduced state. It is not clear whether red blood cells of sensitive subjects contain less of the enzyme or whether they contain an abnormal enzyme molecule with diminished enzyme activity.

It has been suggested that hemolytic drugs may induce the formation of hemoglobin-peroxide compounds. When sufficient reduced glutathione is present these compounds are destroyed through the mediation of another red blood cell enzyme, glutathione peroxidase.[5] Since drug-sensitive cells are

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unable to maintain their supply of reduced glutathione, the hemoglobin may be destroyed by the formation of peroxide compounds under the influence of drugs. It has not been established whether these speculations are correct, and it is possible that the actual chain of events leading to red blood cell destruction is more complex. Extensive studies of other enzymes in drug-sensitive red blood cells have resulted in the demonstration of other abnormalities, some of which may well represent attempts to compensate for a primary deficiency of glucose-6-phosphate dehydrogenase.

Since primaquine sensitivity is limited to certain racial groups, it seemed probable that this defect is transmitted genetically. Family studies with use of the glutathione stability test demonstrated that the red blood cell defect is transmitted as a sex-linked gene, with varying degrees of penetrance in females.[6] Later studies using direct assay of the enzyme glucose-6-phosphate dehydrogenase appear to substantiate these conclusions.

Even in societies most exposed to hemolytic drugs, contact with naturally occurring agents, such as Vicia fava beans, might be expected to lead to early death in some affected persons, resulting in the gradual elimination from the population of the gene for glucose-6-phosphate dehydrogenase deficiency. Why, then, does it persist in some populations at levels as high as 35%? The answer may be in hidden advantages conferred by this gene. An analogous situation occurs with the sickle cell gene. The homozygote suffers from sickle disease, which usually leads to early death, but yet the sickling gene is maintained at very high levels in some Negro populations. Evidence has accumulated that this is due to a balancing, beneficial effect, namely, increased resistance to malaria.[7] Because of the racial distribution of primaquine sensitivity, namely, a high incidence among Sardinians, Sephardic Jews, and Negroes, it has been suggested malaria might also be the factor that helps to maintain high levels of the gene involved in glucose-6-phosphate dehydrogenase deficiency. Evidence has been accumulated by Motulsky[8] which shows marked parallelism between the distribution of this enzymatic deficiency and that of the malarial parasite.

The finding that this type of drug sensitivity is due to a hereditary enzymatic deficiency should lead to investigation of other types of drug reactions from the biochemical and genetic point of view.

DIAGNOSIS OF EFFORT SYNDROME

The characteristic symptoms and clinical findings of effort syndrome still constitute the fundamental basis for diagnosis. The chief manifestations are palpitation, dyspnea, precordial distress, and exhaustion, all of which are aggravated by mild exercise. When the symptoms are typical and there *is no evidence of heart disease on physical examination*, radiologically, and electrocardiographically, diagnosis is easy. In the presence of organic heart disease, diagnosis is rendered more difficult. It can still be established, in most such instances, by a careful correlation of the nature and extent of the avowed disability with the demonstrable evidence of heart disease. Tests of effort tolerance and of the response to hyperventilation have been devised to assist in demonstrating the neurotic basis for the altered functional capacity, but they have not enjoyed wide usage.

The effort syndrome may superficially resemble hyperthyroidism, but differentiation is seldom difficult if one is familiar with the physiological effects of excessive thyroid hormone; the personality structure, and therefore the patient's attitude toward the presenting symptoms, contrasts sharply in the cardiac neurotic as compared to the hyperthyroid person. Where reasonable doubt exists, isotope studies of thyroid function will clarify the diagnosis. The only type of hypertension which may present a problem in differential diagnosis is that associated with pheochromocytoma. When this tumor gives rise to paroxysmal attacks characterized by intermittent hypertension and evidence of sympathetic discharge, the true nature of the disorder is not apt to be confused with the effort syndrome. Persistent hypertension due to pheochromocytoma may mimic the effort syndrome but can be correctly identified by blocking tests and determination of urine catecholamines.

CHANGE OF ADDRESS

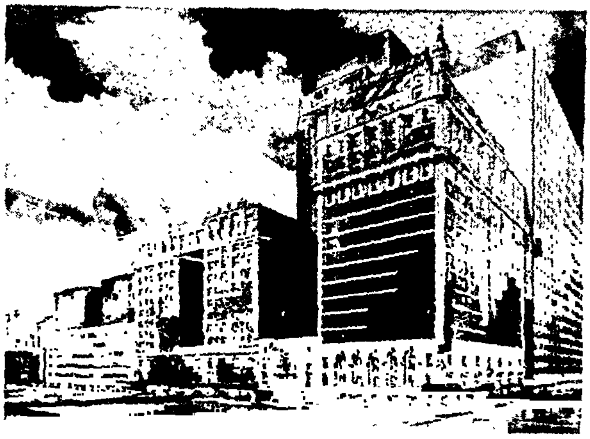
If you change your address please notify The Journal at least six weeks before the change is made. Include the address label clipped from your latest copy of The Journal, being sure to clearly state both your old and new address. If your city has Postal Zone Numbers, be sure to include this Zone Number in your new address.

WELCOME TO DALLAS

From a log cabin at a ferry across the Trinity River to a city whose fame and influence are international—that is the colorful history of Dallas, already home of more than a million Texans and 16th largest city in the United States. The city was born when John Neely Bryan, a Tennessean, came from Arkansas in 1841 to investigate the possibilities of a trading post. Despite its almost unbelievable progress, Dallas has already achieved a charm all its own.

Records fail to show definitely for whom the city was named. Bryan has been quoted as saying that "The town was named for my friend Dallas," but it has never been known who that friend was. Sightseers enjoy visiting the city's many points of interest, ranging from Bryan's first tiny log cabin on the courthouse lawn to beautiful residential areas and modern skyscrapers, including the two tallest buildings west of the Mississippi River.

Geographically situated at the center of the mid-continent oil fields, Dallas is an important headquarters for more than 1,000 firms engaged in the oil production industry and many other concerns in allied industries. Aircraft production, insurance, finance and banking, oil production, electronics, and regional wholesale distribution are the city's leading industries. The city is also the Southwest's top convention center, and it is rapidly becoming one of the nation's most popular. Last year Dallas played host to almost 200,000 convention-goers. Conventioneers enjoy Dallas' ample meeting and exhibit space, including the beautiful new Memorial Auditorium, where this year's clinical meeting will be held, modern in appearance and versatile enough to fit any size group. Dallas is also in the heart of one of the nation's largest blackland belts. Principal crops grown in this area include cotton, corn, wheat, and dairy products. Dallas County has over 2,500 farms.


Adolphus Hotel

The park systems of Dallas include more than 100 different parks, with a total of more than 6,500 acres of developed recreational facilities. Swimming, boating, fishing, or visiting the Marsalis Park Zoo are all popular pastimes in Dallas. Making these many parks enjoyable throughout the year is the fine Texas climate.

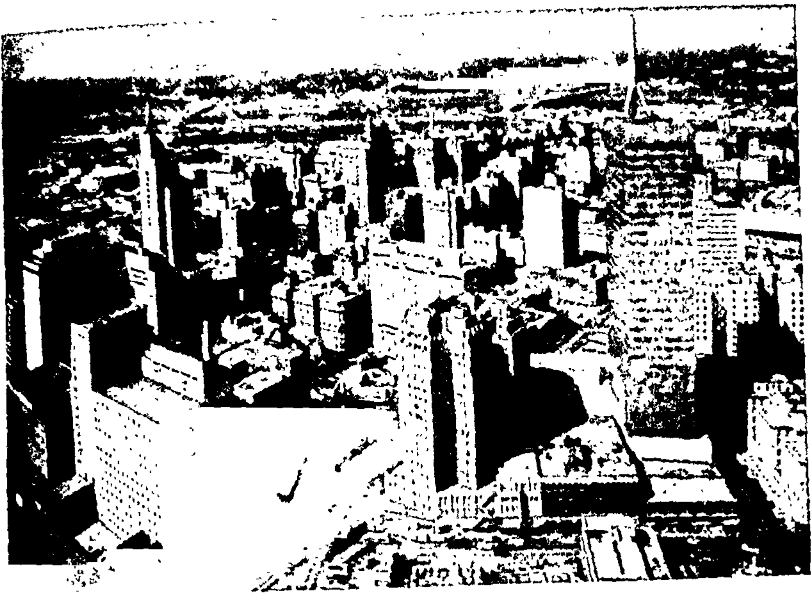
Dallas has a dry, temperate, healthful climate. The average growing season (period between frosts) is 243 days. The average annual number of days with a minimal temperature of 32 F or less is 30. The average number of days of rain (0.01 in. or more) is 81. The average annual snowfall is 2.4 in. (over an average of four days). The annual normal temperature at Dallas is 66.5 F. The annual maximum temperature is 76.6 F. Average annual rainfall is 34.43 in.

Dallas has gained wide fame in recent years as a medical center and as this fame increased new hospitals were established until the city now has 29 hospitals. Nine fully accredited hospitals have some 3,500 rooms. The Dallas County Medical Society has 1,106 members.

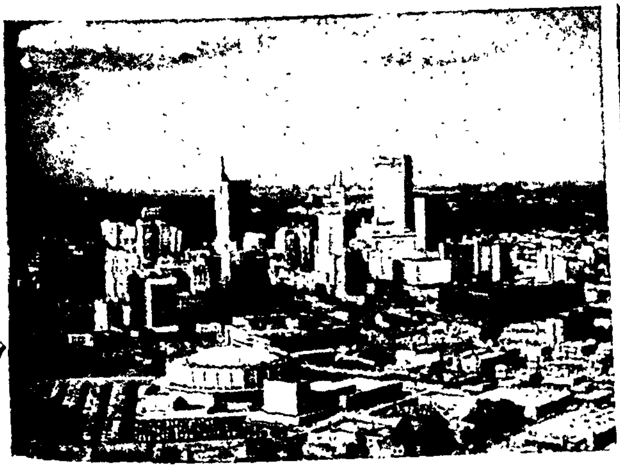
Some 70 theaters throughout the city offer a wide variety of films and there are numerous nightclubs and restaurants presenting excellent entertainment. For the gourmet there are Mexican, Swedish, Italian, German, Greek, and Chinese foods.

Located almost midway between the two oceans at the heart of the Southwest's famous highway network, Dallas is served by six major airlines and five of its nine railroads provide passenger service. Nonstop air service is offered to and from Chicago, New York, Los Angeles, Washington, D. C., Cincinnati, San Francisco, St. Louis, New Orleans, Kansas City, Mo., Houston, Atlanta, Ga., Denver, and other major cities. U. S. highways connecting Dallas with the rest of the nation include, 75, 77, and 67 to the north and south and 80 to the east and west. Almost all of these highways now enter Dallas as divided expressways.

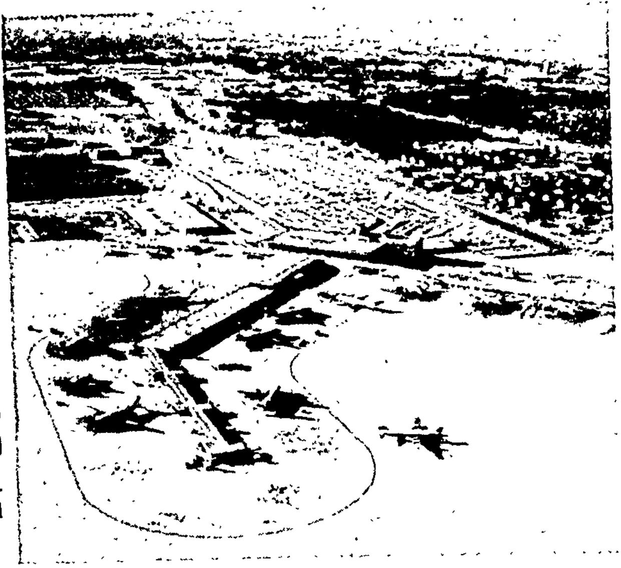
DALLAS SIGHTS



Dallas' many new buildings are visible from observation deck of Southland Tower, tallest building west of Mississippi. Observation deck is open to public.

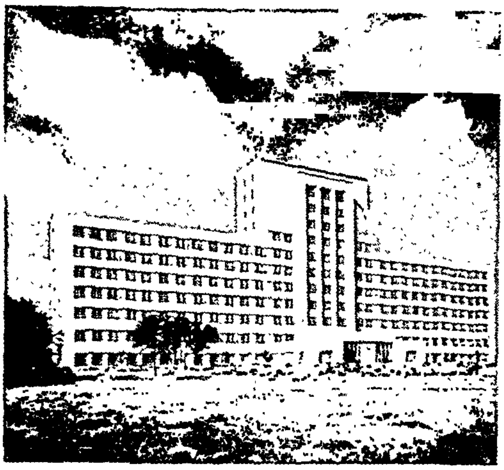


Dallas presents one of nation's most dramatic skylines, including two tallest buildings west of Mississippi River. In foreground is new memorial auditorium.

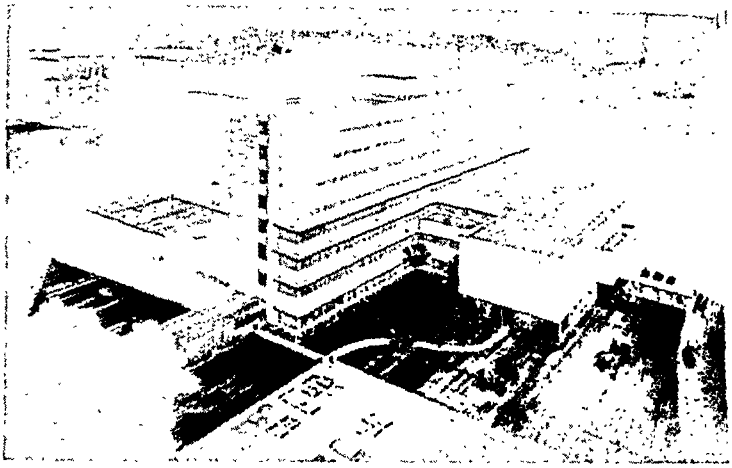


First sight many will see in Dallas—the airport.

Dallas' Monorail, one of few operating in United States, is located on grounds of State Fair of Texas.

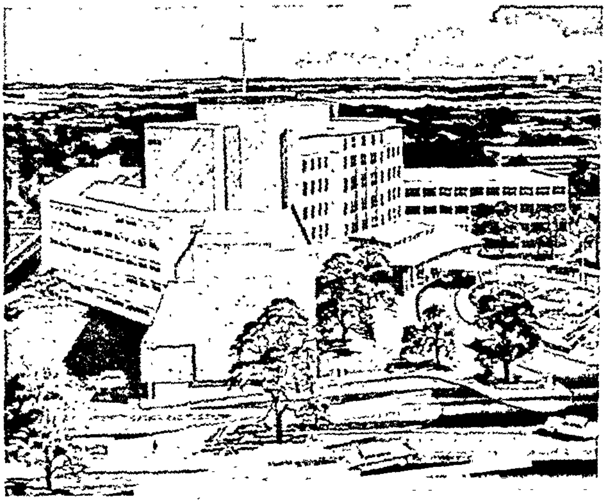


Parkland Memorial Hospital, located on outskirts of downtown Dallas, is hospital of city of Dallas as well as Dallas County.

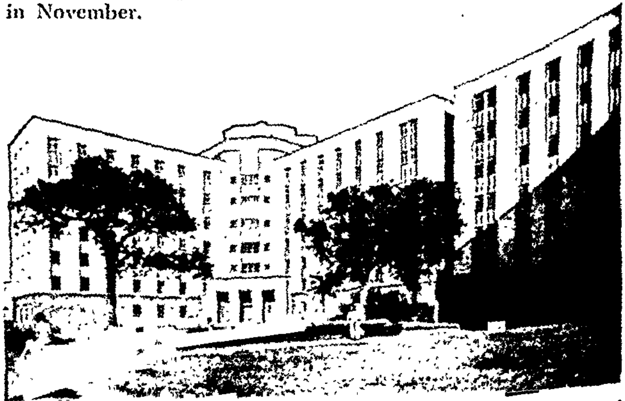


Saint Paul Hospital is to be part of Southwestern Medical Center.

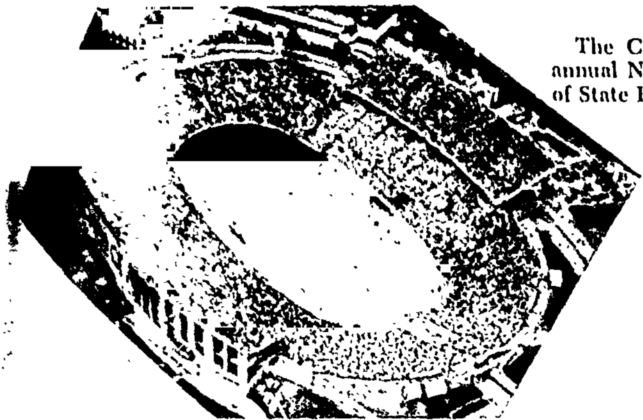
Southern Methodist University's modern campus in Dallas boasts more than 50 buildings.



Methodist Hospital in Dallas will open its new building in November.

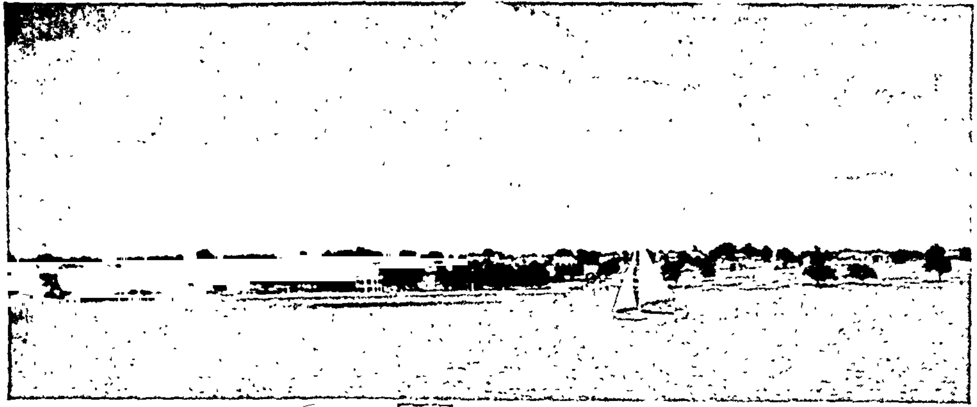


Women's and Children's Building, adjoining Truitt Memorial Unit, of Baylor University Hospital.



The Cotton Bowl, home of S. M. U.'s Mustangs and scene of annual New Year's Day Cotton Bowl Game, is located on grounds of State Fair of Texas.

White Rock Lake, year-round recreation spot, with facilities for swimming, sailing, and water skiing, is just 15 minutes from downtown Dallas.



Although Texas Longhorn is disappearing from the plains, many are kept by cattlemen who remember Texas' early days.

Parkland Memorial Hospital (center), with University of Texas and Southwestern Medical School on right.

THE CLINICAL MEETING

AMERICAN MEDICAL ASSOCIATION

Dallas, Dec. 1-4, 1959

OFFICIAL CALL

To the Officers and Members of the American Medical Association

The Clinical Meeting of the American Medical Association will be held in Dallas, Dec. 1-4, 1959.

House of Delegates: The House of Delegates will convene at 10 a. m. Tuesday, Dec. 1, in the Main Ball Room of the Adolphus Hotel. The representation of the constituent associations in the House for the 1959 Clinical Meeting is as follows:

Alabama	2	Montana	1
Alaska	1	Nebraska	2
Arizona	1	Nevada	1
Arkansas	2	New Hampshire	1
California	17	New Jersey	6
Colorado	3	New Mexico	1
Connecticut	3	New York	17
Delaware	1	North Carolina	3
District of Columbia	2	North Dakota	1
Florida	4	Ohio	9
Georgia	3	Oklahoma	2
Hawaii	1	Oregon	2
Idaho	1	Pennsylvania	11
Illinois	11	Puerto Rico	1
Indiana	5	Rhode Island	1
Iowa	3	South Carolina	2
Isthmian Canal Zone	1	South Dakota	1
Kansas	2	Tennessee	3
Kentucky	2	Texas	8
Louisiana	2	Utah	1
Maine	1	Vermont	1
Maryland	3	Virgin Islands	1
Massachusetts	6	Virginia	3
Michigan	7	Washington	3
Minnesota	4	West Virginia	2
Mississippi	2	Wisconsin	4
Missouri	4	Wyoming	1

The scientific sections of the American Medical Association, the Medical Corps of the Army, the Medical Corps of the Navy, the Medical Corps of the Air Force, the Public Health Service, and the Veterans Administration are entitled to one delegate each.

Scientific Meetings: The Opening General Meeting will begin at 10 a. m., Tuesday, Dec. 1, in the Theater (Room 5, 2nd floor) of the Dallas Memorial Auditorium.

The Scientific Program will open Tuesday, Dec. 1, at 11 a. m., and will continue through the afternoon of that day. The program will continue on Wednesday and Thursday, Dec. 2 and 3, on Friday morning, Dec. 4, closing at 12 noon.

Scientific Exhibits: The scientific exhibits will be housed in the auxiliary exhibit area (1st floor) of the Dallas Memorial Auditorium; the exhibits will be open from 8:30 a. m. to 5:30 p. m. on Tuesday, Wednesday and Thursday, Dec. 1-3, and from 8:30 a. m. to 12 noon on Friday, Dec. 4.

Industrial Exhibits: The industrial exhibits will be housed in the main exhibit area (1st floor) of the Dallas Memorial Auditorium; the exhibits will be open from 8:30 a. m. to 5:30 p. m. on Tuesday, Wednesday, and Thursday, Dec. 1-3, and from 8:30 a. m. to 12 noon on Friday, Dec. 4.

Registration: The Registration Bureau will be located near the entrance to the main exhibit area (1st floor) in the Dallas Memorial Auditorium; it will be open as follows:

Tuesday, Dec. 1—8 a. m. to 5:30 p. m.
Wednesday, Dec. 2—8:30 a. m. to 5:30 p. m.
Thursday, Dec. 3—8:30 a. m. to 5:30 p. m.
Friday, Dec. 4—8:30 a. m. to 12 noon.

Louis M. Orr, President
Norman A. Welch, Speaker, House of Delegates
R. M. McKeown, Secretary-Treasurer

HOUSE OF DELEGATES

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A Roster of the Legislative Body of the American Medical Association

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Gilson Colby Engel, Philadelphia
William L. Estes Jr., Bethlehem
Harold B. Gardner, Harrisburg
M. Louise C. Gloeckner, Conshohocken
Samuel B. Hadden, Philadelphia
Louis W. Jones, Wilkes-Barre
George S. Klump, Williamsport
Thomas W. McCreary, Rochester
Elmer G. Shelley, North East

PUERTO RICO

F. Sanchez-Castano, Santurce

RHODE ISLAND

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George D. Johnson, Spartanburg
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SOUTH DAKOTA

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John K. Glen, Houston
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James C. Terrell, Stephenville
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M. Shelby Jared, Seattle
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Joseph C. Griffith, Milwaukee
L. O. Simenstad, Osceola
William D. Stovall, Madison

WYOMING

Albert T. Sudman, Green River

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Joseph H. Failing, San Marino

DERMATOLOGY

Winfred A. Showman, Tulsa, Okla.

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J. Winthrop Peabody Sr., Washington, D. C.

EXPERIMENTAL MEDICINE AND THERAPEUTICS

Edgar V. Allen, Rochester, Minn.

GASTROENTEROLOGY AND PROCTOLOGY

Stuart T. Ross, Garden City, N. Y.

GENERAL PRACTICE

Lester D. Bibler, Indianapolis

INTERNAL MEDICINE

Charles T. Stone Sr., Galveston, Texas

LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Gordon F. Harkness, *Davenport, Iowa*

MILITARY MEDICINE

Charles L. Leedham, Cleveland

NERVOUS AND MENTAL DISEASES

Francis M. Forster, Madison, Wis.

OBSTETRICS AND GYNECOLOGY

Ralph E. Campbell, Madison, Wis.

OPHTHALMOLOGY

Ralph O. Rychener, Memphis, Tenn.

ORTHOPEDIC SURGERY

H. Relton, McCarroll, St. Louis

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Lall G. Montgomery, Muncie, Ind.

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Walter B. Stewart, Atlantic City

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Walter Zeiter, Cleveland

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R. T. Johnstone, Los Angeles

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Eugene P. Pendergrass, Philadelphia

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Jay J. Crane, Los Angeles

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Leonard D. Heaton

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E. C. Kenney

PUBLIC HEALTH SERVICE

John D. Porterfield

VETERANS ADMINISTRATION

Roy A. Wolford

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Elmer Hess, Erie, Pa.
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Roger I. Lee, Boston
Edward J. McCormick, Toledo, Ohio
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Leland S. McKittrick, Brookline, Mass.
Homer L. Pearson, Miami, Fla.
B. E. Pickett Sr., Carrizo Springs, Tex.

The General Officers, Trustees, Executive Vice President, Assistant Executive Vice President, Editor and two Delegates from the Student American Medical Association are ex officio Members of the House of Delegates.

1959 CLINICAL SESSION REFERENCE COMMITTEES

Amendments to the Constitution and Bylaws:
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Kenneth B. Castleton, Utah
W. Linwood Ball, Virginia
Wesley W. Hall, Nevada
John N. Gallivan, Conn.

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Rutherford T. Johnstone, Section on Prevent. Med.
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Elias S. Faison, No. Carolina
John F. Kelley, New York
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E. L. Bernhart, Wisconsin

GENERAL INFORMATION FOR DELEGATES

The House of Delegates will convene at 10 a. m., Tuesday, Dec. 1, 1959, in the Main Ball Room of the Adolphus Hotel.

The Reference Committee on Credentials will meet in the French Room at 8 a. m. on Tuesday, Dec. 1; the committee will also meet preceding each subsequent meeting of the House of Delegates. Each delegate should present properly executed credentials to the reference committee, which have been signed by the president or secretary of the constituent association, by the chairman or secretary of a section of the Scientific Assembly, or by the surgeon general or chief medical director of the government service represented. Alternate delegates presenting credentials should see that the delegates whose places they are to take have signed the alternate authorization.

Credentials should be presented to the Reference Committee on Credentials as early as possible on Tuesday, Dec. 1, so that the official roll of the House may be prepared and the House of Delegates may organize promptly and proceed with its business.

Meeting rooms have been provided for the use of Reference Committees of the House of Delegates. Reference Committee meetings must be held at the time and in the room assigned so that any who are interested in referred matters may appear before the committees.

Typists will be available in the AMA Headquarters Office (Regency Room) for preparing official reports, resolutions, and motions.

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President, Louis M. Orr	Orlando, Fla.
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Vice Speaker, House of Delegates, Milford O. Rouse	Dallas, Tex.

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Executive Vice President, F. J. L. Blasingame - - - - Chicago

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R. Ward	San Francisco, 1961
H. L. Pearson Jr., Chairman	Miami, Fla., 1962
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Mr. E. J. Holman, Executive Secretary	Chicago

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W. Hyland	Grand Rapids, Mich., 1964
Hugh H. Hussey	Washington, D. C.
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The Executive Vice President, Assistant Executive Vice President, and Editor are *ex officio* members of all Standing Committees.

REGISTRATION

The Registration Bureau will be located near the entrance to the main exhibit area (1st floor) in the Dallas Memorial Auditorium; it will be open as follows:

Tuesday, Dec. 1—8 a.m. to 5:30 p.m.
Wednesday, Dec. 2—8:30 a.m. to 5:30 p.m.
Thursday, Dec. 3—8:30 a.m. to 5:30 p.m.
Friday, Dec. 4—8:30 a.m. to 12 noon

An information window will be operated in connection with the Registration Bureau.

Who May Register

Members—Active, Affiliate, Associate, Service and Honorary—and invited guests may register for attendance at meetings.

Residents, interns, medical students, Student A. M. A. Members, and registered nurses will be given registration cards at a designated window. These should be filled in and presented at the window indicated, together with their professional identification or a card or letter signed by the superintendent of the hospital where they are registered or the dean of the medical school they attend.

Suggestions That Will Facilitate Registration

Members who have Advance Registration Cards can be processed with little or no delay, if the name of your convention hotel or local address and the number of guests you wish to admit are filled in prior to registering.

Present completed card at windows marked "Advance Registration" and you will receive a badge and a copy of the Official Program.

If you do not have an Advance Registration Card and wish us to send one to you, just fill out the form on advertising page 86 and return it before November 6, 1959, to the American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

Members without Advance Registration Cards will find blank cards to fill in on tables near the registration windows. The filled-in card should be presented, together with your American Medical Association Membership pocket card, at the window indicated. Your pocket card will be returned to you and you will receive a badge and a copy of the Official Program.

See advertising page 336 for hotel registration coupon, room rates schedule, and map of Dallas.

Registration at Adolphus Hotel

General Officers of the American Medical Association, members of the House of Delegates, alternate delegates, and the president, president-elect, and constitutional secretary of the constituent medical associations may register at the Adolphus Hotel. Advance registration facilities will be set up in the A. M. A. Headquarters Office in the Regency Room; it will be open as follows:

Sunday, Nov. 29–4 p.m. to 8 p.m.
Monday, Nov. 30–9 a.m. to 8 p.m.

On Tuesday, Dec. 1, registration facilities will be set up in the French Room; it will be open from 8 a.m. to 12 noon.

Delegates are urged to register early so that all members of the House of Delegates may be seated in time for the opening session of the House, which will convene at 10 a.m., Tuesday, Dec. 1.

Medical Society Executives Registration

Staff members of state, territorial, and county medical societies, editors of state medical journals and county medical society bulletins, and staff members of national organizations of medical interest may register in the A. M. A. Headquarters Office in the Regency Room; advance registration facilities will be open as follows:

Sunday, Nov. 29–4 p.m. to 8 p.m.
Monday, Nov. 30–9 a.m. to 8 p.m.

On Tuesday, Dec. 1, registration facilities will be set up in the French Room; it will be open from 8 a.m. to 12 noon.

MEETING PLACES

House of Delegates: Adolphus Hotel, 1321 Commerce St. (between Field and Akard Streets), Main Ball Room. House convenes 10 a.m., Tuesday, Dec. 1.

General Scientific Meetings: Dallas Memorial Auditorium, 717 S. Akard St. Opening General Meeting at 10 a.m., Tuesday, Dec. 1, in the Theater (Room 5, 2nd floor). The Scientific Program opens at 11 a.m., Tuesday, Dec. 1, and closes at 12 noon on Friday, Dec. 4.

Scientific Exhibit: Dallas Memorial Auditorium, auxiliary exhibit area (1st floor). Exhibits open at 8:30 a.m., Tuesday, Dec. 1, and close at 12 noon, Friday, Dec. 4.

Industrial Exhibit: Dallas Memorial Auditorium, main exhibit area (1st floor). Exhibits open at 8:30 a.m., Tuesday, Dec. 1, and close at 12 noon, Friday, Dec. 4.

Motion Pictures: Dallas Memorial Auditorium, Room 4 (2nd floor). Begins Tuesday, Dec. 1, and continues through Friday morning, Dec. 4.

Color Television: Dallas Memorial Auditorium, Room 5 (2nd floor). Begins Tuesday, Dec. 1, and continues through Friday morning, Dec. 4.

DALLAS HOTEL RESERVATIONS

If hotel accommodations have not yet been secured, it is suggested that the application form which may be found on advertising page of this issue of The Journal be filled in and sent directly to the A. M. A. Clinical Meeting Housing Bureau, 101 Commerce St., Dallas 1, Texas. Applications for hotel accommodations should not be sent to the American Medical Association office in Chicago as it delays receipt of the application by the A. M. A. Housing Bureau and its subsequent processing.

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WOMAN'S AUXILIARY

The Woman's Auxiliary to the Texas Medical Association and to the Dallas County Medical Society will be hosts to the wives of physicians attending the Clinical Session of the American Medical Association in Dallas, December 1-4, 1959.

The Dallas County Auxiliary will be especially proud of this occasion since the first Medical Woman's Auxiliary in the nation was organized in Dallas in May, 1917.

A feature attraction will be the Educational Health Fair held in connection with the American Medical Association's December meeting in Dallas.

The information booths in the Dallas Memorial Auditorium, the Statler Hilton and Adolphus Hotels will be staffed by members of the Woman's Auxiliary to the Dallas County Medical Society. Complete details of Auxiliary activities and information will be available.

The following special events and attractions have been planned for visiting ladies, and they are cordially invited to attend:

Calendar of Scheduled Events

November 28—December 6

The Health Fair—An educational fair with many health exhibits sponsored by the Dallas County Medical Association will be located in the main arena on the first floor of the Dallas Memorial Auditorium.

December 1—Tuesday Evening

Concert by the Dallas Symphony Orchestra in the Memorial Auditorium Theatre. Complimentary tickets will be available at the registration desk.

December 2—Wednesday—12:30 p. m.

Grand Ballroom of the Statler-Hilton Hotel. Luncheon and Style Show by Neiman-Marcus honoring Dr. Louis Orr, President of the American Medical Association, and Mrs. Orr. Also honored will be Mrs. Frank Gastineau, President of the Woman's Auxiliary to the American Medical Association. Price of the luncheon—$3.75. Tickets will be available at all three information booths (Dallas Auditorium, Statler Hilton and Adolphus Hotels).

December 3—Thursday—10:00 to 12:00 noon

Guided tours of Southland Center. The 42 story Southland Tower is the tallest building west of the Mississippi River with the highest public observation deck and heliport. The tour will include a visit to the tower's "Chapel in the Sky" on the 39th floor. Tickets available at information booths.

THE SCIENTIFIC PROGRAM

DALLAS MEMORIAL AUDITORIUM

The Council on Scientific Assembly, in presenting the Scientific Program for the Dallas Clinical Meeting, wishes to call attention to the high caliber and broad interest of the material to be discussed. Physicians attending the meeting will find a wide choice of subjects. Lectures, symposiums, panel discussions, motion pictures, color television, a Trans-Atlantic Clinico-Pathological Conference, and the Scientific Exhibit will all take place in the Dallas Memorial Auditorium.

Color television will originate in Parkland Memorial Hospital and will be carried to the Auditorium by closed circuit. The Trans-Atlantic Conference will be conducted by a two-way telephone connection with the Glasgow Division of the British Medical Association on Thursday, Dec. 3, at 2:30 p. m. in Dallas and 8:30 p. m. in Glasgow.

Breakfast round tables will be held on Wednesday and Thursday mornings, Dec. 2 and 3, at 7:15 a. m. in the Baker Hotel. Each round table will be limited to 40 persons. Tickets will be available at $2.75 each, including the gratuity, as long as the supply lasts, in the Registration Area of the Auditorium.

A special première film showing will be held on Wednesday evening, Dec. 2, at 8:30 p. m. in the Crystal Ballroom of the Baker Hotel.

The Council on Scientific Assembly extends its appreciation to the Local Committee on Arrangements in Dallas for its initiative and painstaking care in preparing the program. Dr. Everett C. Fox, General Chairman of Arrangements; Dr. C. D. Bussey, Chairman of the Committee on Scientific Program; and Dr. John S. Chapman, Chairman of the Television Committee, have all been exceedingly active during the year. Others deserving mention include Dr. James A. Martin, Chairman, Scientific Exhibit Committee, and Dr. Don G. Harrel, who arranged the manikin demonstrations on problems of delivery. Mr. Millard J. Heath, Executive Secretary, *Dallas County Medical Society, has at all times been* most helpful.

Appreciation is also extended to Smith, Kline & French Laboratories, Philadelphia, for its part in the presentation of color television and the Trans-Atlantic Conference.

The program begins on Tuesday morning, Dec. 1, and continues until Friday noon, Dec. 4.

OPENING GENERAL ASSEMBLY: ROOM 5

Tuesday morning, Dec. 1

10:00

Presiding: Everett C. Fox, Dallas, General Chairman

Speakers:

Franklin W. Yeager, Corpus Christi, Texas.
President, Texas Medical Association.

Floyd A. Norman, Dallas.
President, Dallas County Medical Society.

Stanley P. Reimann, Philadelphia.
Chairman, Council on Scientific Assembly, American Medical Association.

Louis M. Orr, Orlando, Fla.
President, American Medical Association.

11:00

Presiding: C. D. Bussey, Dallas, Program Chairman

The Role of Medicine in the Space Age.
Hubertus Strughold, Professor of Space Medicine and Advisor for Research, School of Aviation Medicine, United States Air Force, Randolph Air Force Base, Texas.

LECTURES: ROOM 3

Tuesday afternoon, Dec. 1

Chairman: Don G. Harrel, Dallas.

1:30 Indications for Hysterectomy.
Willis H. Jondahl, Harlingen, Texas.

2:00 Endometriosis.
William P. Devereux, Dallas.

2:30 What Can Be Learned from a Dilatation and Curettage.
Buford Word, Birmingham, Ala.

3:00 The Irritable Female Bladder.
Maxwell Johnson, Tulsa, Okla.

3:30 Hydramnios and the Diagnosis of Congenital Anomalies in the Delivery Room.
Frank Moya and Virginia Apgar, New York.

4:00 Obstetrical Anesthesia and Analgesia.
Raymond Courtin, Dallas.

Wednesday morning, Dec. 2

Chairman: T. Haynes Harvill, Dallas.

9:00 Colloidal Isotopes in Treatment of Leukemia and Related Diseases.
Joseph M. Hill, Dallas.

9:30 The Natural History of Hypertensive Vascular Disease and Its Relation to Treatment.
James V. Warren, Galveston, Texas.

10:00 Esophagitis.
Arthur M. Olsen, Rochester, Minn.

10:30 *Newer Concepts of Metabolism of Bilirubin.*
William T. Foulk, Rochester, Minn.

11:00 Acute Renal Failure.
Walton R. Akenhead, New Orleans.

11:30 The Use and Misuse of Tranquilizers in Medical Practice.
Stewart Wolf, Oklahoma City.

Wednesday afternoon, Dec. 2

Chairman: Andrew B. Small, Dallas.

1:30 Surgical Approaches to the Treatment of Parkinson's Disease.
William W. McKinney, Fort Worth, Texas.

2:00 The Natural History of Pancreatitis.
John M. Howard, Philadelphia.

2:30 *The Acute Abdomen.*
Harwell Wilson, Memphis, Tenn.

3:00 The Physiological Basis for Treatment of Duodenal Ulcer.
N. C. Hightower Jr., Temple, Texas.

3:30 Incidence of Peptic Ulcer in Patients with Rheumatoid Arthritis and the Effect of Steroid Therapy.
Lloyd B. Bartholomew, Rochester, Minn.

4:00 Common Skin Diseases.
Harry L. Arnold Jr., Honolulu, Hawaii.

4:30 New Advances in the Treatment of Cardiac Arrhythmias.
Eliot Corday, Herbert Gold, and David Irving, Los Angeles.

Thursday morning, Dec. 3

Chairman: Edward L. Pratt, Dallas.

9:00 Trouble Spots in the Management of the Newborn.
Franklin C. Behrle, Kansas City, Kan.

9:30 Indications for Urological Appraisal in Children.
Henry Buchtel, Denver.

10:00 Immunizations: Routine, Special Cases, and the Future of Immunization.
Blair E. Batson, Jackson, Miss.

10:30 Practical Management of Children with Heart Murmurs.
Gladys J. Fashena, Dallas.

11:00 Children's Eyes—What a Practitioner Should Know About Strabismus, Injuries, Retrolental Fibroplasia and Vision Tests.
Tullos O. Coston, Oklahoma City.

11:30 The Recognition of Common Pediatric Orthopedic Conditions.
Edward T. Smith, Houston, Texas.

Thursday afternoon, Dec. 3

Chairman: Dan C. Gill, Dallas.

1:30 Conservative Treatment of Cystic Disease of the Female Breast.
John V. Goode, Dallas.

2:00 Adjuncts in Hernia Repair: Consideration of Basic Principles.
Francis C. Usher, Houston, Texas.

2:30 Athletic Injuries.
Don H. O'Donoghue, Oklahoma City.

3:00 Chemotherapy—Adjuvant to Cancer Surgery.
J. Samuel Binkley, Oklahoma City.

3:30 The Use of Tracheostomy in Lower Respiratory Disease.
Watts R. Webb, Jackson, Miss.

4:00 Complications of Diaphragmatic Hernia.
G. V. Brindley Jr., Temple, Texas.

4:30 Reliability of the Serum Amylase Determination.
Thomas F. Boyd, Boston.

Friday morning, Dec. 4

Chairman: Paul J. Thomas, Dallas.

9:00 Changes in the Bronchial Epithelium in Relationship to Cigarette Smoking and Lung Cancer.
Oscar Auerbach, East Orange, N. J., Arthur Purdy Stout, E. Cuyler Hammond, and Lawrence Garfinkel, New York.

9:30 Modern Resuscitation Techniques.
Peter Safar, Baltimore.

10:00 Prolonged Veno-Arterial Pumping for Circulation Support.
James F. Dickson III, and James Dow, Philadelphia.

10:30 Indications for Anticoagulants and Choice of Drugs.
James W. Culbertson, and Sherman H. Hoover, Memphis, Tenn.

11:00 Chemical and Radioactive Iodine Studies Following I-131 Therapy of Hyperthyroidism.
Joseph W. Goldzieher, Fred Hurd, and Jack Dominitz, San Antonio, Texas.

11:30 Hypercalcemia.
Donald W. Seldin, Dallas.

12:00 Bacterial Endocarditis.
Ralph Tompsett, Dallas.

SYMPOSIUMS: ROOM 1

Tuesday afternoon, Dec. 1

Chairman: Le Roy J. Kleinsasser, Dallas.

1:30-3:00

Symposium on Cerebrovascular Insufficiency

Clinical Considerations of Cerebrovascular Insufficiency.
C. H. Millikan, Rochester, Minn.

Carotid and Cerebral Angiography in Cerebrovascular Insufficiency.
John Whiteleather, Memphis, Tenn.

Surgical Considerations of Cerebrovascular Insufficiency.
Michael E. De Bakey, E. Stanley Crawford, and William S. Fields, Houston, Texas.

3:00-4:30

Symposium on Soft Tissue Injury.

The Lungs.
Byron H. Evans, Fresno, Calif.

The Liver.
Gordon Madding, San Mateo, Calif.

The Colon.
John A. Schilling, Oklahoma City.

The Upper and Lower Urinary Tract.
Harry Spence, Dallas.

Wednesday morning, Dec. 2

Chairman: Grady Reddick, Dallas.

9:00-10:30

Symposium on Whiplash Injury of the Neck

Orthopedist.
Bruce M. Cameron, Houston, Texas.

Neurosurgeon.
E. C. Schultz, Memphis, Tenn.

Physiatrist.
Donald L. Rose, Kansas City, Kan.

10:30-12:00

Symposium on Iatrogenic Disease

Induced by Rational Medication.
Jesse D. Rising, Kansas City, Kan.

Induced by Electrocardiogram.
E. Grey Dimond, Kansas City, Kan.

Induced by Surgery on the Gastrointestinal Tract.
Alvin J. Cummins, Memphis, Tenn.

Wednesday afternoon, Dec. 2

Chairman: J. Warner Duckett, Dallas.

1:30-3:00

Symposium on Intestinal Obstruction

Causes and Pathological Physiology.
J. F. McKenney, Temple, Texas.

Diagnosis.
Terrell Speed, Temple, Texas.

Surgical Treatment.
Raleigh R. White, Temple, Texas.

Symposium on Biliary Tract Surgery

The Differential Diagnosis of Jaundice.
Edward Storer, Memphis, Tenn.

Indications for Exploration of the Common Duct. The Retained Stone. Operative Choledochogram.
J. Cuthbert Owens, Denver.

The Sphincter of Oddi.
John Reynolds, Chicago.

Modern Roentgenographic Evaluation of the Biliary Tract.
Donald N. Dysart, Temple, Texas.

Thursday morning, Dec. 3

Chairman: John L. Goforth, Dallas.

9:00-10:30

Symposium on Newer Laboratory Procedures

Radioactive Triolein and Oleic Acid in Malabsorbtion States.
W. Crockett Chears, Dallas.

Abnormal Serum Proteins, Rheumatoid Factors, Le Phenomenon, Myeloma Proteins.
W. M. Mikkelsen, Ann Arbor, Mich.

The Use of Transaminase Determination in Hepatic and Cardiac Disease.
Felix Wroblewski, New York.

10:30-12:00

Symposium on Carcinoma of the Breast

Surgical Treatment.
Edward T. Krementz, New Orleans.

Chronic Cystic Mastitis and Carcinoma of the Breast.
Edward H. Soule, Rochester, Minn.

Mastastatic Disease.
Nylene E. Eckles, Houston, Texas.

Thursday afternoon, Dec. 3

Chairman: Henry M. Winans Sr., Dallas.

1:30-3:00

Symposium on Anemia

Anemia in Pregnancy.
Jack A. Pritchard, Dallas.

Anemia in Infection.
Charles C. Sprague, New Orleans.

Iron Deficiency Anemia.
Alfred P. Kraus, Memphis, Tenn.

3:00-5:00

Symposium on Problems with Antimicrobial Drugs

Untoward Reactions to Antimicrobial Drugs.
Ellard M. Yow, Houston, Texas.

Prophylactic Use of Antimicrobial Drugs.
Vernon Knight, Nashville, Tenn.

A Practical Program for Control of Staphylococcal Infections in Hospitals.
Ian Maclean Smith, Iowa City, Iowa.

Management of the Individual Patient with Staphylococcal Infection.
Joseph E. Geraci, Rochester, Minn.

Friday morning, Dec. 4

Chairman: Perry C. Talkington, Dallas.

9:00-10:30

Panel Discussion on Premarital and Marital Counseling
Oren R. Depp, New Orleans, Moderator.

Participants: Bertrand Y. Glassberg, St. Louis; John C. Montgomery, and Rev. Julius A. Fritze, Dallas.

10:30-12:00

Symposium on the Problem Child

Pre-Adolescent.
John G. Young, Dallas.

Adolescent.
Robert L. Stubblefield, Dallas.

Legal Aspects.
Judge Lewis F. Russell, Dallas.

PANEL DISCUSSIONS: ROOM 2

Tuesday afternoon, Dec. 1

Chairman: Elliott Mendenhall, Dallas.

1:30-3:00

Panel Discussion on the Treatment of Rheumatoid Arthritis.
W. Paul Holbrook, Tucson, Ariz., Moderator.

Participants: Charley J. Smyth, Denver; Morris Ziff, Dallas; and William S. Clark, New York.

3:00-4:30

Panel Discussion on Pulmonary Insufficiency.
Richard V. Ebert, Little Rock, Ark., Moderator.

Participants: Richard L. Riley, Baltimore; William F. Miller, Dallas; and Maurice S. Segal, Boston.

Wednesday morning, Dec. 2

Chairman: D. W. Carter Jr., Dallas.

9:00-10:30

Panel Discussion on the Treatment of Diabetes.
Randall G. Sprague, Rochester, Minn., Moderator.

Participants: Kelly M. West, Oklahoma City; Lillian Recant, St. Louis; and Leonard L. Madison, Dallas.

10:30-12:00

Panel Discussion on Infectious Diseases in Children.
Harris D. Riley Jr., Oklahoma City, Moderator.

Participants: Harriet M. Felton, Galveston, Texas, and Leo J. Geppert, Fort Sam Houston, Texas.

Wednesday afternoon, Dec. 2

Chairman: John S. Bagwell, Dallas.

1:30-3:00

Panel Discussion on Congestive Heart Failure.
James V. Warren, Galveston, Texas, Moderator.

Participants: Carleton B. Chapman, Dallas; Walton R. Akenhead, New Orleans; and E. Grey Dimond, Kansas City, Kan.

3:00-4:30

Panel Discussion on Non-Cancerous Medical and Surgical Disease of the Colon Including Preoperative Preparation.
J. Arnold Bargen, Rochester, Minn., Moderator.

Participants: Hyrum Reichman, Salt Lake City; Frank McGlone, Denver; and Edgar Jacob Poth, Galveston, Texas.

Thursday morning, Dec. 3

Chairman: Tom B. Bond, Fort Worth, Texas.

9:00-10:30

Panel Discussion on Gynecological Cancer.
John A. Wall, Houston, Texas, Moderator.

Participants: Phil C. Schreier, Memphis, Tenn.; Willis E. Brown, Little Rock, Ark.; and Juan A. del Regato, Colorado Springs, Colo.

10:30-12:00

Panel Discussion on Supervoltage Irradiation Therapy Today.
Jerry E. Miller, Dallas, Moderator.

Participants: Charles L. Martin, Dallas; Gilbert Fletcher, Houston, Texas; and Juan A del Regato, Colorado Springs, Colo.

Thursday afternoon, Dec. 3

Chairman: Oran V. Prejean, Dallas.

1:30-3:00

Panel Discussion on Obstetrical Emergencies.
Willis E. Brown, Little Rock, Ark., Moderator.

Participants: Arthur B. Lunin, Houston, Texas; Michael Newton, Jackson, Miss.; and John W. Records, Oklahoma City.

3:00-5:00

Panel Discussion on Treatment of Cancer of the Thyroid.
R. Lee Clark Jr., Houston, Texas, Moderator.

Participants: E. C. White, Mavis P. Kelsey, William O. Russell, Raymond G. Rose, and Lowell S. Miller, Houston, Texas.

MOTION PICTURES: ROOM 4

Following is a partial list of the motion pictures which will be shown daily:

Hospital Sepsis—A Communicable Disease.
American Medical Association, American College of Surgeons, and American Hospital Association.

Hospital Infection Control.
Brooke Army Medical Center, San Antonio, Texas.

Management of Breast Feeding.
Gordon D. Jensen, Seattle.

A Complete Office Gynecological Examination.
Frederick J. Hofmeister, Milwaukee.

Routine Pelvic Examination and Cytologic Method.
S. B. Gusberg, New York.

Total Hysterectomy.
Somers H. Sturgis, Boston.

Cardiac Arrest.
J. Beard, London.

Just 4 Minutes (Resuscitation for Cardiac Arrest).
Lenore R. Zohman, Valhalla, N. Y.

Acute Gallbladder Disease.
Allen Boyden, Portland, Ore.

Carcinoma of the Stomach: Gastrectomy.
Waltman Walters and William H. Re Mine, Rochester, Minn.

Cholecystectomy with Common Duct Exploration.
John B. Blalock, New Orleans.

Ocular Inflammation.
J. H. King Jr., Washington, D. C.

The Intraperitoneal Repair of Incisional Hernias with Marlex Mesh.
Francis C. Usher, Houston, Texas.

Use of Synthetic Knitted Mesh in Hernia Repair.
John R. Paine, Buffalo.

Physical Examination of the Newborn.
Mary B. Olney, San Francisco.

Management of Burns, Part I—Supportive Care.

Management of Burns, Part II—Local Care.
Department of the Army, Washington, D. C.

Radiation Hazards and Control in Diagnostic Radiology.
American College of Radiology.

Endoscopic Diagnosis of Certain Lesions of the Lower Bowel.
R. J. Jackman, Rochester, Minn.

The Early Detection and Medical Management of Ulcerative Colitis. Premiere Showing.
Nicholas C. Hightower, Jr., A. Comptom Boders, Jr., Henry Laurens, and Richard D. Haines, Temple, Texas.
Discussion by J. Arnold Bargen, Rochester, Minn.

Matter of Fact.
American Medical Association and American Bar Association.

PREMIERE FILM SHOWING BAKER HOTEL, CRYSTAL BALLROOM

Wednesday evening, Dec. 2

8:30 Rehabilitation Adds Life to Years.
Committee on Rehabilitation, American Medical Association.

Introductory remarks will be made by:
Louis M. Orr, President, American Medical Association.

Frank H. Krusen, Chairman, Committee on Rehabilitation, American Medical Association.

COLOR TELEVISION: ROOM 5

Tuesday afternoon, Dec. 1

2:00-4:00

Studies Preparatory to Heart Surgery.
Carleton B. Chapman, The University of Texas Southwestern Medical School, Dallas, Moderator.

Participants: Faoud Bashour, William F. Miller, and Richard Ernst, The University of Texas Southwestern Medical School, Dallas.

Demonstration of techniques and methods involved in location of cardiac abnormalities and in assessing the status of the circulation.

Wednesday morning, Dec. 2

10:00-12:00

Surgery—Operative Clinic.
Ben J. Wilson, The University of Texas Southwestern Medical School, Dallas, Moderator.

Participants: Jerry A. Stirman, The University of Texas Southwestern Medical School, Dallas.

Wednesday afternoon, Dec. 2

2:00-3:00

Neurosurgery.
William Kemp Clark, The University of Texas Southwestern Medical School, Dallas, Moderator.
Participants: Sven Eliasson, and Morris Sanders, The University of Texas Southwestern Medical School, Dallas.

3:00-4:00

Orthopedic Surgery.
Charles F. Gregory, The University of Texas Southwestern Medical School, Dallas, Moderator.
Participants: Louis H. Paradies and James H. Pollock, The University of Texas Southwestern Medical School, Dallas.

Demonstration of the use of various appliances, post immobilization care of injured limb, and treatment of strained joints.

Thursday morning, Dec. 3

10:00-12:00

Obstetrics—Operative Clinic.
Jack A. Pritchard, The University of Texas Southwestern Medical School, Dallas, Moderator.
Participants: Reuben H. Adams, Paul MacDonald, M. T. Jenkins, and William W. McCue, The University of Texas Southwestern Medical School, Dallas.

Friday morning, Dec. 4

10:00-11:00

Dermatology.
Bedford Shelmire Jr., The University of Texas Southwestern Medical School, Dallas, Moderator.
Participants: Coleman Jacobson, J. B. Howell, and D. Shelton Blair, The University of Texas Southwestern Medical School, Dallas.

Presentation of 10 cases of troublesome dermatological problems, presentation of tumors of the skin, and demonstration of office procedure.

11:00-12:00

Ophthalmology.
Carroll W. Browning and Jerome Byers, The University of Texas Southwestern Medical School, Dallas.

A demonstration of eye muscle imbalance problems, common external eye problems, and plastic surgery of the eye.

TRANS-ATLANTIC CLINICO-PATHOLOGICAL CONFERENCE: ROOM 5

Thursday, Dec. 3

American Medical Association Clinical Meeting, Dallas.
British Medical Association, Glasgow Division,
Glasgow, Scotland.
Presented in cooperation with Smith, Kline & French Laboratories, Philadelphia

2:30-3:30 p. m. (Central Standard Time)
8:30-9:30 p. m. (Greenwich Time)

American Medical Association Panel in Room 5, Dallas Memorial Auditorium.
John S. Chapman, The University of Texas Southwestern Medical School, Dallas, Moderator.
Pathologist: Charles T. Ashworth, The University of Texas Southwestern Medical School, Dallas.
Participants: James V. Warren, The University of Texas Medical Branch, Galveston, and Richard L. Riley, Johns Hopkins University Medical School, Baltimore.
British Medical Association, Glasgow Division, Panel in Glasgow, Scotland.

BREAKFAST ROUND TABLES: BAKER HOTEL

Ten breakfast round tables will be held in the Baker Hotel, five on Wednesday morning and five on Thursday morning. Attendance at each breakfast will be limited to 40 persons. Tickets will be available at $2.75 each including the gratuity, as long as the supply lasts, in the Registration Area in the Dallas Municipal Auditorium.

Following are the subjects to be discussed at each breakfast, the chairmen and the participants, and the place:

Wednesday morning, Dec. 2

7:15-8:45

1. **Diabetes: Newer Drugs and Research.**
   Chairman: James H. Herndon, Dallas.
   Participants: Randall G. Sprague, Rochester, Minn., and Lillian Recant, St. Louis.
   Baker Hotel, English Room.
2. **Diagnosis and Treatment of Non-Rheumatoid Arthritis.**
   Chairman: Richard A. Dathe, Dallas.
   Participants: W. Paul Holbrook, Tucson, Ariz.; William S. Clark, New York; and Charley J. Smyth, Denver.
   Baker Hotel, Tally-Ho Room.
3. **Air-Borne Infections.**
   Chairman: Robert R. Shaw, Dallas.
   Participants: Richard L. Riley, Baltimore, and Maurice S. Segal, Boston.
   Baker Hotel, Banquet Room No. 2.
4. **Metabolic Changes in the Injured and Burned Patient.**
   Chairman: Jerry Stirman, Dallas.
   Participants: John M. Howard, Philadelphia, and John A. Schilling, Oklahoma City.
   Baker Hotel, Banquet Room No. 4.
5. **Indications for and Choice of Diuretics.**
   Chairman: Alfred W. Harris, Dallas.
   Paricipant: Richard V. Ebert, Little Rock, Ark.
   Baker Hotel, Banquet Room No. 5.

Thursday morning, Dec. 3

7:15-8:45

6. **Severe and Unusual Infections.**
   Chairman: Ralph Tompsett, Dallas.
   Participants: Vernon Knight, Bethesda, Md., and Ellard M. Yow, Houston, Texas.
   Baker Hotel, English Room.
7. **Hepatitis.**
   Chairman: E. R. Hayes, Dallas.
   Participants: Felix Wroblewski, New York, and William T. Foulk, Rochester, Minn.
   Baker Hotel, Tally-Ho Room.
8. **Problems in Growth and Development.**
   Chairman: Floyd A. Norman, Dallas.
   Participants: Harris D. Riley Jr., Oklahoma City, and Blair E. Batson, Jackson, Miss.
   Baker Hotel, Banquet Room No. 2.
9. **The Management of Bladder Neck Obstruction in Children.**
   Chairman: Harry M. Spence, Dallas.
   Participant: Henry A. Buchtel, Denver.
   Baker Hotel, Banquet Room No. 4.
10. **Newer Methods in Anesthesiology.**
   Chairman: Oliver F. Bush, Dallas.
   Participant: Peter Safar, Baltimore.
   Baker Hotel, Banquet Room No. 5.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located on the first floor of Dallas Memorial Auditorium, with access from the Industrial Exhibit, with the exception of two special features which will be presented in Room 6 on the second floor. These include manikin demonstrations on problems of delivery twice daily Tuesday through Thursday, and a symposium on sunlight and the skin which will be presented on Wednesday.

The Scientific Exhibit will open at 8:30 a. m. Tuesday, Dec. 1, and will close at 12:00 noon on Friday, Dec. 4.

PROBLEMS OF DELIVERY—MANIKIN DEMONSTRATIONS

Room 6, second floor.

Manikin demonstrations on problems of delivery will be conducted daily at 12:00 noon and 4:30 p. m., Tuesday through Thursday, by a group of Dallas obstetricians. An opportunity for questions and answers will follow each demonstration.

Don G. Harrel, Dallas, is in charge of the demonstrations. The following schedule will be presented:

Tuesday afternoon, Dec. 1

12:00 Forceps Delivery.
Oran V. Prejean, Dallas.
4:30 Delivery from Breech and Other Abnormal Presentations.
Charles H. Bruce, Dallas.

Wednesday afternoon, Dec. 2

12:00 Forceps Delivery.
William G. Langston, Dallas.
4:30 Delivery from Breech and Other Abnormal Presentations.
Asa A. Newsom Sr., Dallas.

Thursday afternoon, Dec. 3

12:00 Forceps Delivery.
Don G. Harrel, Dallas.
4:30 Delivery from Breech and Other Abnormal Presentations.
H. C. Henderson Jr., Dallas.

SYMPOSIUM ON SUNLIGHT AND THE SKIN

Wednesday, Dec. 2

Room 6, second floor.

A symposium on Sunlight and the Skin is presented by the Committee on Cosmetics of the American Medical Association in conjunction with an exhibit on this subject. The program follows:

9:00 a. m. Chairman: Stephen Rothman, Chicago.
Physical Factors in Sun Exposures.
Farrington Daniels Jr., Portland, Ore.
Experimental Photobiology.
Harold Blum, Princeton, N. J.
The Physiological and Pathological Changes in Sunburn and Suntan.
Allan L. Lorincz, Chicago.
Problems of Solar Hypersensitivity and Their Pathogenesis (Polymorphous Light Eruptions, Solar Urticaria, Photosensitization from Exogenous Sources, etc.).
Rudolf L. Baer, New York.
Discussion by Farrington Daniels Jr., Harold Blum, Allan L. Lorincz, and Rudolf L. Baer.

1:30 p. m. Chairman: Raymond R. Suskind, Cincinnati.
Diseases Aggravated by Sunlight (L.E., Porphyria); Therapeutic Benefits of Ultraviolet Light (Psoriasis, Atopic Dermatitis, Acne, etc.).
Kenneth H. Burdick, Cleveland.
The Sunlight Factor in Aging and Skin Cancer.
James B. Howell, Dallas.
The Prevention and Management of Harmful Effects Induced by Sunlight—Physical and Chemical Sunscreens.
John M. Knox, Houston, Texas.
The Use and Abuse of the Psoralens.
S. William Becker Jr., Chicago.
The Sun and Your Patients.
Discussion by Kenneth H. Burdick, James B. Howell, John M. Knox, and S. William Becker Jr.

SPECIAL EXHIBIT OF FRACTURES

Spaces 301-304

The Special Exhibit on Fractures is presented under the auspices of the following committee:

Ralph G. Carothers, Cincinnati, Chairman.
Harry B. Hall, Minneapolis.
Charles V. Heck, Chicago.

Continuous demonstrations will be conducted daily from 10 a. m. to 12 noon and from 2 to 4 p. m., Tuesday morning to Friday noon on the following subjects:

Fractures in Children.
Fractures of the Elbow.
Fractures of the Ankle.

Basic principles will be stressed and ample opportunity will be allowed for questions. Members of the committee will be present to discuss individual problems with visiting physicians. A pamphlet giving the essential features of the exhibit will be distributed. The following surgeons will assist the committee in the presentation of the exhibit:

Roy E. Brackin, Winnetka, Ill.
Warner D. Bundens Jr., Philadelphia.
David M. Cameron, El Paso, Texas.
Robert H. Cofield, Covington, Ky.
L. J. Cordrey, Cleveland.
Robert H. Denham Jr., South Bend, Ind.
Samuel H. Fraerman, Highland Park, Ill.
Robert T. Gallagher, Cincinnati.
Morris E. Goldman, Lewiston, Maine.
Kenneth T. Hubbard, Oak Park, Ill.
Richard H. Jones, Minneapolis.
Edward H. Juers, Red Wing, Minn.
William J. Kisiel, Springfield, Mass.
Andrew R. Mailer, Chicago.
William M. McMillan, Chicago.
Moore Moore Jr., Memphis, Tenn.
Jack Moshein, Beverly Hills, Calif.
Theodore Norley, West Palm Beach, Fla.
Frederick G. Rosendahl, Minneapolis.
Edmund T. Rumble Jr., Callicoon, N. Y.
Garland F. Smith, St. Louis.
William J. Stewart, Columbia, Mo.
Milton S. Thompson, San Antonio, Texas.
Franklin V. Wade, Flint, Mich.

HISTORY OF MEDICINE

Space 106

Texas Medical History.
William M. Crawford, Committee on Medical History, Texas Medical Association, Austin, Texas.

Space 108

History of Medical Education in the United States.

Walter S. Wiggins and Catherine Hayes, Council on Medical Education and Hospitals, American Medical Association, Chicago.

Space 109

Historic "Firsts" in Experimental Therapeutics.

Augustus Gibson, Charles E. Lyght, and *Marion J. Finkel,* Merck Sharp & Dohme Research Laboratories, Rahway, N. J., and West Point, Pa.

Space 110

"Old Doc," First Auto Test Driver.

Harold M. Camp, Theodore R. Van Dellen, and John A. Mirt, Illinois State Medical Society, Chicago.

ARTHRITIS AND RHEUMATISM

Space 202

Diagnosis and Treatment of Rheumatic Diseases.

Irvin F. Hermann, Kenneth M. Kron, Russell A. Del Toro, John Richards, and Richard T. Smith, Benjamin Franklin Clinic, Philadelphia.

Space 203

The Feet in Rheumatoid Arthritis.

John J. Calabro, Carlo Nosenzo, and Felix Traugott, Seton Hall College of Medicine and Jersey City Medical Center, Jersey City, N. J.

Space 213

Surgery of the Knee Joint in Chronic Arthritis.

Theodore A. Potter, Robert B. Brigham Hospital, Boston.

Space 204

Aortic Insufficiency and Aortitis Associated with Rheumatoid Spondylitis.

W. Robert Irby, Elam C. Toone Jr., Edwin L. Pierce, and Lester F. Belter, Medical College of Virginia, Richmond, Va.

Space 205

Gout and Blood Dyscrasias.

John H. Talbott and Donald M. Wilson, Buffalo General Hospital and University of Buffalo School of Medicine, Buffalo.

Space 206

Do You Have a Question, Doctor?

Donald F. Hill, Tucson, Ariz.; L. Maxwell Lockie, Buffalo; and John W. Sigler, Detroit.

Space 208

Action on Arthritis.

Ronald W. Lamont-Havers and Russell L. Cecil, Arthritis and Rheumatism Foundation, New York.

Space 209

Rheumatoid Spondylitis.

Thomas E. Weiss, William H. Schindel, Hurst B. Hatch, and Louis E. Tolbert Jr., Ochsner Clinic, New Orleans.

Space 210

The Latex Fixation Tests for Rheumatoid Arthritis.

Vol K. Philips and Norman O. Rothermich, Ohio *State University College of Medicine, Columbus,* Ohio.

Space 212

Corticosteroids in Rheumatoid Arthritis.

G. M. Wilson Jr., John W. Sigler, and Dwight C. Ensign, *Henry Ford Hospital, Detroit.*

Space 214

Reflex Neurovascular Dystrophy of the Extremities.

Otto Steinbrocker, Sidney S. Berkowitz, Mortimer E. Ehrlich, Harold Feinstein, Thomas G. Argyros, and Edoardo Guariglia, Hospital for Joint Diseases and Lenox Hill Hospital, New York.

CARDIOVASCULAR DISEASES

Space 306

Shock and Arrhythmias: Their Management.

Arthur Bernstein, Franklin Simon, Jerome Kaufman, Fred Cohen, Bernard Robins, and Edwin L. Rothfeld, Newark Beth Israel Hospital, Newark, N. J.

Space 309

The Management of Peripheral Arterial Insufficiency.

Saul S. Samuels and Herbert E. Shaftel, New York.

Space 310

Oral Digitalis Maintenance After Rapid Intravenous Digitalization.

Robert B. Crouch, Houston, Texas.

Space 311

Returning the Coronary Patient to Productivity.

Shepard Shapiro, New York.

Space 312

Treatment of Essential Hypertension (A Double-blind Study).

Raymond F. Grenfell, University of Mississippi School of Medicine, Jackson, Miss., and James G. Hilton, Marquette University School of Medicine, Milwaukee.

DIABETES

Space 314

Medroxyprogesterone: A Unique New Oral Progestin.

Harold L. Upjohn and Jacob C. Stucki, Medical and Research Divisions of the Upjohn Company, Kalamazoo, Mich.

Space 315

Combined Insulin-Tolbutamide Treatment of Maturity Onset Diabetes.

Sydney S. Lazarus and Bruno W. Volk, Isaac Albert Research Institute of the Jewish Chronic Disease Hospital, Brooklyn.

Space 317

Management of the Patient with Diabetes Mellitus: Sulfonylurea Drugs Alone and in Combination with Insulin.

Elaine P. Ralli, Roy C. Gumpel, and Sylvia Cruess, New York University-Bellevue Medical Center, New York.

DERMATOLOGY

Space 319

Treatment of Dermatoses with Intravenous 6-Methylprednisolone.

Lawrence C. Goldberg and Joel R. Barkoff, University of Cincinnati College of Medicine, Cincinnati.

Space 320

Griseofulvin in Ringworm Infections.

James Q. Gant Jr., Arnold Gould, and *Marc A. Weiner,* Washington, D. C.

Space 321

Triamcinolone Therapy in Dermatologic Disorders.

Saul Blau, Raul Fleischmajer, and *Norman B. Kanof,* New York University Postgraduate Medical School, New York.

Space 322

Fibrin Foam Injection Plus Dermabrasion in Treatment of Depressed Scars—5 Years Experience.

Arthur S. Spangler and Charles S. Keuper, Massachusetts General Hospital, Peter Bent Brigham Hospital *and Harvard Medical School, Boston.*

Space 323

Critical Evaluation of Topical Agents Using the Paired Comparison Method.

Frank W. Crowe, and Sheldon A. Walker, University of Oregon Medical School, Portland, Ore., and T. B. Fitzpatrick, Harvard Medical School, Boston.

Space 324
The Effects of the Sun on the Skin.
Veronica L. Conley, Committee on Cosmetics, American Medical Association, Chicago.

Space 325
Treatment of Disseminated Coccidioidomycosis with Amphotericin B.
Thomas H. Sternberg, Victor D. Newcomer, Edwin T. Wright, Earl G. McNall, Lloyd J. Sorensen, and Ronald M. Reisner, University of California Medical Center and Veterans Administration Center General Medical and Surgical Hospital, Los Angeles.

Space 326
Treatment of Secondary Infections of the Lower Extremities in Ambulatory Patients.
Reginald H. Farrar and Milton E. Ashur, Jersey City, N. J.

NEUROLOGY AND PSYCHIATRY

Space 402
Help and Hope for the Dystrophic Patient.
Ade T. Milhorat, Muscular Dystrophy Associations of America, Inc., New York.

Space 403
Effects of Phenothiazines in Chronic Psychotics Refractory to Previous Treatment.
Jackson A. Smith, Dorothy Christian, Avonell Rutherford, and H. C. Henderson, Nebraska Psyciatric Institute, Omaha.

Space 404
Recognition and Treatment of Depressions.
Frank J. Ayd Jr., Franklin Square Hospital, Baltimore.

Space 405
Management of Emotional Disorders in General Practice.
Blaine E. McLaughlin, Woman's Medical College of Pennsylvania, Philadelphia.

Space 406
Drugs in Emotional Disorders: Past and Present.
Leo E. Hollister, Veterans Administration Hospital, Palo Alto, Calif.

Space 407
Dual Approach to Patient Care.
Ross V. Parks and G. F. Moessner, Los Angeles.

Space 408
Facial Pain.
Arnold P. Friedman, Charles A. Carton, and Asao Hirano, Montefiore Hospital, New York.

Space 409
Alcoholism: Alcoholism Is Your Business.
Marvin A. Block, Buffalo, Committee on Alcoholism, American Medical Association.

Space 411
Management of Depression in General Medicine.
Joseph L. Bell, Hans Tauber, Albert Santy, and Frank Pulito, New York.

Space 413
Depression: Treatment with a New Monoamine Oxidase Inhibitor, Tranylcypromine.
H. P. MacCubbin and B. E. Roebuck, Winchester Memorial Hospital, Winchester, Va.

Space 414
Diagnosis and Treatment of Anxiety and Depression Reactions.
John C. Maerz, Howard G. Lee, and Harry H. Hunter, Oaks, Pa.

Space 415
Depression or Anxiety? A Common Diagnostic and Therapeutic Problem.
Milton M. Perloff and Leonard J. Levick, Philadelphia.

Space 416
Sublingual Ergotamine Therapy for Vascular Headache.
Lester S. Blumenthal and Marvin Fuchs, George Washington University Medical School, Washington, D. C.

Space 419
Acetazolamide in the Treatment of Epilepsy in Children.
Jean Holowach and Don L. Thurston, St. Louis.

Space 420
Cerebral Palsy: A Basic Approach to Successful Management.
Winthrop M. Phelps, Children's Rehabilitation Institute, Reisterstown, Md.

Space 421
The Family Physician's Responsibility to the Cerebral Palsied Patient.
Brewster S. Miller, United Cerebral Palsy Associations, Inc., New York.

DRUG THERAPY

Space 503
Sulfonamides New and Old: A Perspective.
William P. Boger, Norristown State Hospital, Norristown, Pa.

Space 504
Clinical Experience with a New Broncholytic Drug.
Edward Settel, Forest Hills Nursing and Rehabilitation Center, Forest Hills, N. Y.

Space 505
Iron Deficiency States: Treatment with Intramuscular Iron-Dextran.
Frank E. Kappen and Norman L. Mauroner, Willis-Knighton Clinic, Shreveport, La.

Space 506
Antineoplastic Effects of Fluoropyrimidines.
A. R. Curreri, C. Heidelberger, and F. J. Ansfield, University of Wisconsin School of Medicine, Madison, Wis., and R. Duschinsky and R. J. Schnitzer, Hoffmann-LaRoche Inc., Nutley, N. J.

Space 507
Comparison of Circulatory Effects of "Peripheral Vasodilators."
Walter Redisch, J. Murray Steele, and Kurt de Crinis, New York University College of Medicine, New York.

Space 508
Drug Action as Measured by Rotating Explants of Human Respiratory Epithelium.
Gunther Corssen, C. George Lefeber, Earl E. Pitsinger, and Charles R. Allen, University of Texas Medical Branch, Galveston, Texas.

Space 509
Inhibition of Cholesterol Synthesis.
Wilbur W. Oaks, Philip Lisan, and John H. Moyer, Hahnemann Medical College and Hospital, Philadelphia.

Space 510
Furaltadone—A New Peroral Antibacterial Agent.
James Neill Lysaught, Wesley Hospital Foundation, Oklahoma City.

Space 511
Pancreatic Enzymes.
Kenneth W. Thompson and R. T. Price, Organon Research Division, Orange, N. J.

Space 512
Buccal and Enteric Coated Trypsin: Clinical Study of 150 Cases.
John M. Coleman, Arkell M. Vaughn, C. M. Annan, and John A. Caserta, Stritch School of Medicine of Loyola University, Mercy and Cook County Hospitals, Chicago.

Space 513
Studies with the New Diuretics: A Comparison of the Electrolyte, Weight, and Water Loss in Humans.
A. Kahn and I. J. Greenblatt, Beth-el Hospital, Brooklyn.

Space 514
Comparative Pharmacology and Clinical Effectiveness of the Newer Diuretics.
Morton Fuchs, John H. Moyer, Sanford Mallin, and Benjamin Newman, Hahnemann Medical College and Hospital, Philadelphia.

Space 515
Demethylchlortetracycline (DMCT): A New Broad Spectrum Antibiotic Development, Chemistry, Pharmacology and Clinical Experience.
Stanton M. Hardy, W. M. Sweeney, A. C. Dornbush, J. M. Ruegsegger, J. R. D. McCormick, and N. O. Sjolander, Lederle Laboratories, Pearl River, N. Y.

Space 516
A New Analgesic in Acute and Chronic Pain.
Robert H. Yonemoto and Ralph L. Byron Jr., City of Hope Medical Center, Duarte, Calif.

Space 518
Identification Guide for Solid Dosage Forms.
Walter Wolman and Gordon Schrotenboer, Chemical Laboratory, American Medical Association, Chicago.

Space 521
Anti-inflammatory Adrenocorticoids.
Thomas H. McGavack and *Kung-Ying Tang Kao*, Veterans Administration Center, Martinsburg, W. Va.

SURGERY

Space 603
Tumors of the Parotid Gland: Their Surgical Management.
O. H. Beahrs, K. D. Devine, and L. B. Woolner, Mayo Clinic and Mayo Foundation, Rochester, Minn.

Space 604
Arterial Surgery for Arteriosclerotic Occlusions.
Dale J. Austin and Jesse E. Thompson, Dallas.

Space 605
A New Technique for the Repair of Incisional and Inguinal Hernias.
Francis C. Usher and John L. Ochsner, Baylor University College of Medicine, Houston, Texas.

Space 606
Esophageal Atresia of the Newborn.
E. R. Munnell, A. H. Bell, and C. M. Bielstein, Oklahoma City Clinic, Oklahoma City.

Space 608
Surgical Treatment of Bullous Emphysema.
Robert R. Shaw, Donald L. Paulson, and John L. Kee, Baylor University Medical School, Dallas.

Space 609
Surgical Aspects of Diaphragmatic Hernias.
Lawrence M. Shefts, San Antonio, Texas.

Space 610
What Is Your Diagnosis—A Clinic on Proctoscopy.
John McGivney, Marcel Patterson, Edward Lefeber, and Louis Field, *University of Texas Medical* Branch, Galveston, Texas.

Space 611
Complete and Continuous Parenteral Nutrition.
Carl O. Rice and J. H. Strickler, St. Barnabas Hospital, Minneapolis.

Space 613
Management of the Nephrotic Syndrome in Adults.
E. Lovell Becker, John T. Ellis, and David D. Thompson, The New York Hospital–Cornell Medical Center, New York.

Space 614
Newer Mechanisms of Constipation—and Their Control.
Samuel Weiss, Jerome Weiss, and Bernard Weiss, New York.

OPHTHALMOLOGY AND OTOLARYNGOLOGY

Space 615
Congenital Diseases of the Eye.
Everet H. Wood, Lovelace Clinic, Albuquerque, N. Mex.

Space 616
Secretory Otitis Media in Children.
C. F. Lake and R. L. J. Kennedy, Mayo Clinic and Mayo Foundation, Rochester, Minn.

Space 617
The Inflamed Eye.
Dan M. Gordon, Cornell Medical Center and New York Hospital, New York.

Space 618
Total Management of ENT Infections.
Joseph C. Elia, Reno, Nev.

RADIOLOGY

Space 703
Misleading Calcific Shadows in the Abdomen.
L. G. Bartholomew, J. C. Cain, G. D. Davis, and A. H. Bulbulian, Mayo Clinic and Mayo Foundation, Rochester, Minn.

Space 704
Diagnosis by Angiography in Patients with Stroke.
Robert A. Kuhn, All Souls Hospital, Morristown, N. J.

Space 706
Selective Visceral Arteriography.
Colvin H. Agnew, John Derrick, Robert N. Cooley, and Raymond Bermudez, *University* of Texas Medical Branch, Galveston, Texas.

Space 707
The Value of the Scintogram in the Diagnosis of Thyroid Disease.
J. Martin Miller, Melvin A. Block, and Raymond Mellinger, Henry Ford Hospital, Detroit.

Space 708
Positive Contrast Ventriculography.
McClure Wilson and S. R. Snodgrass, University of Texas Medical Branch, Galveston, Texas.

Space 710
Dosage Distributions for Various Loadings of the Ernst Cervical Radium Applicator.
Jack S. Krohmer, University of Texas Southwestern Medical School, Dallas.

PEDIATRICS

Space 711
Congenital Muscular Torticollis (Wryneck).
M. B. Coventry, L. E. Harris, and A. J. Bianco Jr., Mayo Clinic and Mayo Foundation, Rochester, Minn.

Space 712
Criteria for *Diagnosis of Some Congenital* Defects and Treatment of Some Complications of Therapy.
Lyon P. Strean, Joseph T. Ichter, and Eugene P. Leoni, Pennhurst State School, Spring City, Pa., and Hospital of the University of Pennsylvania, Philadelphia.

Space 713
Infections in Private Pediatric Practice: Rapid Diagnostic Susceptibility Tests and Prompt Antibiotic Therapy.
Frank M. Ripberger, Robert H. Anderson, and Richard E. Palmer, Alexandria Hospital, Alexandria, Va.

Space 714
Deaths in Children 48 Hours After Hospital Admission.
Thomas E. Reichelderfer, Robert L. Baird, Alphonse P. Palmieri, and Helen J. Ossofsky, Washington, D. C.

Space 715
Baby Feeding: Prolonged Intervals and Early Use of Solids.
Walter W. Sackett Jr., Doctors Hospital, Coral Gables, Fla.

PREVENTIVE MEDICINE

Space 717
Seven Paths to Fitness.
W. W. Bauer, W. W. Bolton, D. A. Dukelow, Fred V. Hein, and Wallace Ann Wesley, Department of Health Education, American Medical Association, Chicago.

Space 718
Nutrition Nonsense.
Philip L. White, Eugene H. Stevenson, and Mary Jane Kibler, and Sandra Brodie, Council on Foods and Nutrition, American Medical Association, Chicago.

Space 720
Western Equine and St. Louis Encephalitis in California: A Clinical Follow-up Study 1953.
Knox H. Finley, Stanford University School of Medicine, Stanford, Calif., and California State Department of Public Health, Berkeley, Calif.

Space 721
Who Has V.D.?
William J. Brown, Venereal Disease Branch, Communicable Disease Center, U. S. Public Health Service, Atlanta, Ga.

Space 722
Epidemiological Study of Infectious Syphilis.
John M. Knox, John A. Soquel, William O. Hosking, C. Hunter Montgomery, and Fred K. Laurentz, Venereal Disease Clinic, City of Houston Health Department, Houston, Texas.

Space 723
Prolonged Release Agents in the Treatment of Obesity.
Burton M. Cohen, Elizabeth, N. J.

Space 724
The Changing Polio Picture.
Thomas M. Rivers, The National Foundation, New York.

OBSTETRICS AND GYNECOLOGY

Space 803
The Psychic Factor in Prenatal Symptomatology.
Henry A. Belafsky, Samuel Breslow, Jack E. Shangold, and Leonard M. Hirsch, Perth Amboy, N. J.

Space 804
Surgical Complications of Pregnancy.
Frederick H. Falls and Charlotte S. Holt, Illinois State Department of Public Health, Chicago.

Space 805
The Treatment of Threatened Abortion.
Herschel S. Murphy, Roselle, N. J.; Ernest C. Lowenstein, Rahway, N. J.; Floyd D. Gindhart, Trenton, N. J.; Archibald K. Maness, Greensboro, N. C.; Harry T. McFarland, Cincinnati; and Edward R. Farrage, Council Bluffs, Iowa.

Space 806
Dysmenorrhea—Cramps or Psyche?
Dennis M. Voulgaris, Gulf Coast Medical Foundation and Rugeley and Blasingame Clinic, Wharton, Texas.

Space 808
A Vaginal Lytic Agent.
Richard X. Sands, St. Luke's Hospital—Woman's Hospital Division, New York.

Space 809
Iron Therapy in Pregnancy.
Fred B. Hapke and Jack L. Staur, Ohio State University Health Center, Columbus, Ohio.

MISCELLANEOUS SUBJECTS

Space 811
Rehabilitation of the Cancer Patient.
Roald N. Grant and H. A. Press, American Cancer Society, New York.

Space 812
Smoking and Lung Cancer.
Lewis C. Robbins, Cancer Control Program, Public Health Service, Department of Health, Education, and Welfare, Washington, D. C.

Space 813
Tobacco and Health—Research Program of the Tobacco Industry Research Committee.
Robert C. Hockett, Tobacco Industry Research Committee, New York.

Space 814
Cancer in Texas Today.
Charles Phillips, Committee on Cancer, Texas Medical Association, Austin, Texas.

Space 815
Acute Intermittent Porphyria.
D. A. Malooly, W. N. Powell, N. C. Hightower Jr., R. D. Haines, and J. D. Ibarra, Scott and White Clinic, Temple, Texas.

Space 816
The Diagnostic Uses of Cholecystokinin in Biliary Tract Disease.
W. Crockett Chears Jr., Milford O. Rouse, Cecil O. Patterson, Herbert A. Bailey, F. Clark Douglas, and John W. Fisher, Dallas.

Space 817
Sarcoidosis in Texas.
Harry E. Sarles, August R. Remmers, and Norman L. Renfro, University of Texas Medical Branch, Galveston, Texas.

Space 818
Gastrografin in Gastroenterologic Diagnosis.
F. Clark Douglas and Herbert A. Bailey, Dallas.

Space 819
National Clearing House Program—American Association of Blood Banks.
William P. Murphy Jr., American Association of Blood Banks, Miami, Fla.

Space 820
American National Red Cross Blood Programs.
Sam T. Gibson, The American National Red Cross, Washington, D. C.

Space 821
Hospital Services Tailored to Meet Patient Needs.
E. T. Thompson, U. S. Public Health Service, Washington, D. C.

Space 822
Fundamentals in the Management of Asthma.
Henry D. Ogden, New Orleans and Marvin Fuchs, Washington, D. C.

Space 824
Group Medical Practice.
George W. Cooley, Council on Medical Service, American Medical Association, Chicago.

Space 825
The Educational Council for Foreign Medical Graduates.
Ruth E. Burrows, Educational Council for Foreign Medical Graduates, Evanston, Ill.

Space 826
American Society of Internal Medicine.
Clyde C. Greene Jr., American Society of Internal Medicine, San Francisco.

THE INDUSTRIAL EXHIBITION

13th A. M. A. Clinical Meeting

Dec. 1-4, 1959 • Dallas Memorial

The Industrial Exhibits at the Dallas Meeting will provide a quick review of the new developments in medicine.

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JOHN L. MURPHY
Advertising Manager and Manager of Industrial Exhibition

INDUSTRIAL EXHIBITORS—13th CLINICAL MEETING

	Booth Numbers
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Alcon Laboratories, Inc.	E-7
American Medical Association Publications	G-2, 3
American Medical Education Foundation	R-15
Ames Company, Inc.	H-3, 4
Arnar-Stone Laboratories, Inc.	F-3
Audio-Digest Foundation	C-9
Ayerst Laboratories	D-4, 5
Barton Manufacturing Co., The	G-9
Baxter Laboratories	C-1, 2
Blakiston Division—McGraw-Hill Book Co.	J-13
Borcherdt Malt Extract Co.	H-1
Breon, George A., & Co.	D-11, 12
Bristol-Myers Products Division	S-25
Burdick Corp., The	G-6
Burns Cuboid Co.	R-2
Burroughs Wellcome & Co. (U.S.A.) Inc.	H-4
Burton, Parsons & Co.	R-4
Cameron Surgical Instruments Co.	K-8
Chicago Reference Book Co.	S-7
Chilean Iodine Educational Bureau, Inc.	S-5
Christian Medical Society	R-3
Ciba Pharmaceutical Products, Inc.	B-3, 4, 5, 6
Coca-Cola Co., The	R-23
Colwell Publishing Co.	D-6
Contour Sales, Inc.	S-6
Coreco Research Corp.	D-14
Dallas Radionics	D-15
Dalzo, Inc.	R-19
Darwin Laboratories	P-2
DePuy Manufacturing Co., Inc.	D-10
Desitin Chemical Co.	J-16
Devereux Schools	S-29
Dine, Lester A., Co.	G-7
Doho Chemical Corp.	H-2
Eaton Laboratories	R-10, 11, 12, 13
Encyclopaedia Britannica, Inc.	R-8
First Texas Chemical Manufacturing Co.	K-2
Fischer, H. G., & Co.	J-15
Flint Eaton & Co.	C-3, 4
Foregger Co., Inc., The	S-8
Fougera, E., & Co., Inc.	P-5
Geigy Pharmaceuticals	B-1, 2
General Foods Corp.	S-31, 32
Gerber Products Co.	M-4
Gordon, M. J., Consultants	R-16
Graf-Apsco Co., The	S-27
Grant, R. D., Co., The	O-8
Great Books of the Western World	S-26
Grune & Stratton, Inc.	S-2
Health Insurance Council	P-4
Heinz, H. J., Co.	S-4
Holland-Rantos Co., Inc.	S-3
Ives-Cameron Co.	G-1
Jackson-Mitchell Pharmaceuticals, Inc.	R-21
Johnson & Johnson	H-16
Kellogg Co.	C-8
Knoll Pharmaceutical Co.	O-1
Lanpar Co.	G-10
Lea & Febiger	E-1
Lederle Laboratories	H-7, 8, 9, 10
Lilly, Eli, & Co.	H-11, 12, 13
Lindquist, R. J., Co.	S-28
Lippincott, J. B., Co.	C-5, 6
Lloyd Brothers, Inc.	D-1
Loma Linda Food Co.	F-5
Lov-e' Brassiere Co.	H-7
Mead Johnson & Co.	S-1
Medco Products Co., Inc.	R-17
Medical Film Guild, Ltd.	S-23, 24
Medical Plastics Laboratories	K-1
Medical Protective Co.	K-4
Mennen Co., The	F-12

	Booth Numbers
Merck Sharp & Dohme	Q-1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Merrell, Wm. S., Co., The	H-2
Miles Reproducer Co., Inc.	R-20
Milex Southern	K-10
Miller Surgical Co.	D-16
Minnesota Mining and Manufacturing Co.	L-1, 2
Modern Medicine	F-4
C. V. Mosby Co.	E-5
McNeil Laboratories, Inc.	D-9
National Cash Register Co., The	F-15, 16
National Drug Co.	M-3
National Federation of Catholic Physicians Guilds	O-9
Nordson Pharmaceutical Laboratories, Inc.	R-25
Organon, Inc.	H-5
Ortho Pharmaceutical Corp.	H-14, 15
Orthopedic Frame Co.	R-7
Oxy-Lyfe Corp.	O-2
Parke, Davis and Co.	B-7, 8
Pepsi-Cola Co.	C-7, 8
Personal Products Corp.	C-10
Pet Milk Co.	R-5, 6
Pfizer Laboratories	B-12, 13
Pharmacia Laboratories, Inc.	F-13
Plough, Inc.	J-3
Postgraduate Medicine	G-8
Prior, W. F., Co., Inc.	F-1
Procter & Gamble Co., The	N-6
Professional Life & Casualty Co.	E-1
Purdue Frederick Co., The	B-11, 16
Pyramid Rubber Co., The	F-6
Ralston Purina Co.	F-2
Rhinopto Co., Inc., The	O-3
Richards Manufacturing Co.	G-7
Riker Laboratories, Inc.	R-24
Robins, A. H., Co., Inc.	F-7, 8
Roche Laboratories	P-7, 8, 9, 10
Roerig, J. B., & Co.	S-33
Rorer, Wm. H., Inc.	D-13
Ross Laboratories	C-7
Sanborn Co.	P-6
Sandoz Pharmaceuticals	E-4
Saunders, W. B., Co.	M-1, 2
SchenLabs Pharmaceuticals, Inc.	J-1, 2
Schering Corp.	A-1, 2, 3, 4, 5, 6
Scholl Manufacturing Co., Inc., The	N-1
Schmid, Julius, Inc.	H-6
Searle, G. D., & Co.	D-7, 8
Seven-Up Co., The	O-9, 10
Simmons Co.	S-30
Smith-Dorsey, Div. of the Wander Co.	P-1
Smith Kline & French Laboratories	B-9, S-34
Squibb, E. R., & Sons	N-8, P-12, 13, 14
State Medical Journal Advertising Bureau, Inc.	D-2
Strasenburgh, R. J., Co.	P-11
Stuart Co., The	R-22
Swift & Co.	O-6
Tarcadu Co.	K-9
Thompson Engineering Products	K-3
Uniform Manufacturing Co., The	R-9
U. S. Vitamin & Pharmaceutical Corp.	J-4, 5
Walgreen Co.	K-6, 7
Wallace Laboratories	E-10, J-6, 7, 8, P-15, 16
Wampole Laboratories	K-5
Wander Co., The	G-4, 5
Warner-Chilcott Laboratories	N-5
Westwood Pharmaceuticals	G-6
White Laboratories, Inc.	L-3, 4, 5, 6
Winthrop Laboratories	F-9, 10
World Medical Association, The	B-15
Wyeth Laboratories	I-1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Wynn Pharmacal Corp.	B-10
Year Book Publishers, Inc.	O-5
Young, F. E., & Co.	R-18

REPORTS OF OFFICERS

REPORT OF BOARD OF TRUSTEES

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Board of Trustees is respectfully submitted:

From July 1, 1958, to June 30, 1959, the Board held five meetings in addition to those held during the Annual and Clinical Meetings of the Association.

The composition of the Board changed during this period. The death of Dr. Warren W. Furey in November, 1958, necessitated an interim appointment. In December, 1958, therefore, the Board selected Dr. W. Linwood Ball, Vice-president, to serve as Trustee until the next meeting of the House of Delegates. In June, 1959, Dr. Percy E. Hopkins was elected to fill the unexpired term of Dr. Furey, and Drs. R. B. Robins and Hugh H. Hussey Jr. were re-elected for terms of five years. Dr. E. Vincent Askey, by virtue of his election as President-elect, also became a member of the Board in June, 1959.

At its organizational meeting, June 11, 1959, the Board elected Dr. Leonard W. Larson, Chairman; Dr. Julian P. Price, Vice-chairman; Dr. Hugh H. Hussey Jr., Secretary, and Dr. Raymond M. McKeown, Secretary-Treasurer of the Association. Dr. Cleon A. Nafe serves as the elected member of the Executive Committee of the Board.

During this report period the Board divided itself into three committees: the Committee on Scientific Activities, the Committee on Socio-Economic Activities, and the Committee on Miscellaneous Activities. The objective of these committees is to review the current programs of all committees and councils of the Association.

A report regarding the establishment of these committees was made to the House of Delegates in June, 1959.

Annual and Clinical Meetings

Policies.—At its meeting in November, 1958, the Board reviewed its present policies and practices concerning arrangements for the annual and clinical meetings and adopted, in December, 1958, a set of policies for the guidance of the staff. Adoption of these guides has improved our liaison with medical groups, hotels, exhibitors, and others.

Centennials.—In order to permit several of the Scientific Sections to arrange centennial programs in 1959 at the Atlantic City meeting, sufficient funds were appropriated by the Board so that distinguished guests could be invited to participate.

Meeting Dates.—The following places and dates have previously been approved for annual and clinical meetings of the Association:

Annual Meetings: 1960—Miami Beach, June 13-17
1961—New York, June 26-30
1962—Chicago, June 11-15

Clinical Meetings: 1960—Washington, D. C., Nov. 29-Dec. 2
1961—Denver, Nov. 28-Dec. 1
1962—Los Angeles, Nov. 26-30

General Chairmen.—On nomination by the local medical society, the following General Chairmen of the Local Committee on Arrangements have been chosen as indicated:

Annual Meetings:
1960—Miami Beach, Dr. Reuben Chrisman, Dr. Homer Pearson } *Co-chairmen*
1961—New York, Dr. William L. Wheeler
Clinical Meetings:
1960—Washington, D. C., Dr. Donald L. Stubbs
1961—Denver, Dr. William Condon

A. M. A. Affiliations

The American Medical Association continues its membership in the Joint Blood Council, Inc.; Joint Commission on Accreditation of Hospitals; Blue Shield Commission; World Medical Association; U. S. Chamber of Commerce, and others.

The Bylaws of the Joint Commission on Accreditation of Hospitals (following the withdrawal of the Canadian Medical Association) were amended to provide that the American Medical Association have seven representatives on the Board of Commissioners. The Board appointed Dr. Hugh Carmichael to the additional position.

The Board voted to rejoin the National Health Council as a member, and appointed Drs. Cleon Nafe, W. Linwood Ball, and Ernest B. Howard as American Medical Association delegates.

The Board also accepted membership on the Advisory Council on Medical Education, and designated Dr. Leland S. McKittrick, Chairman of the Council on Medical Education and Hospitals, or his designated alternate to serve as the A. M. A. representative.

Dr. Frederick C. Swartz was appointed an A. M. A. representative on the Joint Council to Improve the Health Care of the Aged. The representatives are now Dr. Swartz, the President-elect and the Executive Vice-president.

Liaison Activities

Liaison committees have been appointed to meet with similar committees of the American Nurses' Association, American College of Surgeons, the Association of American Medical Colleges, the American Hospital Association, Pharmaceutical Manufacturers Association, American Pharmaceutical Association, National Association of Retail Druggists, American Bar Association, Association of State and Territorial Health Officers, Inter-Association Committee on Health, and Health Insurance Council.

The Board has cooperated with the College of American Pathologists in the revision of its Code of Procedures and Ethics Relating to Autopsies; has approved collaboration with the American Child Guidance Foundation in its 1960 program; and is assisting the Junior Chamber of Commerce in its health program activities.

Several members of the Board are members of the Medical Advisory Board of the Sears Roebuck Foundation.

In June, 1959, the National Fund for Medical Education appointed Dr. McKittrick to its Advisory Council.

The A. M. A.-A. H. A. Joint Medicolegal Education Committee was first established in 1957 with the American Hospital Association in an effort to devise an effective in-hospital medical professional liability prevention program. The name was recently changed to indicate the medicolegal education nature of its work.

Representatives

On appointment by the Board, several of the Trustees and others attended or participated in the programs of the following associations during the report period:

British Medical Association and Canadian Medical Association Joint Meeting—Dr. Sigurd Gundersen.

World Health Organization—Dr. Leonard W. Larson, as member of U. S. delegation to World Health Assembly, and Dr. Walter B. Martin, as member of the Expert Committee on Medical Care.

International Seminars, Inc.—Dr. F. S. Crockett on a study tour in South America.

National League for Nursing—Drs. Maurice Hoeltgen and Julian P. Price as representatives on the Committee on Nursing of the NLN.

Advisory Board for Medical Specialties—two members of the Council on Medical Education and Hospitals.

Blue Shield Commission—Drs. George Fister, David B. Allman, and Dwight Murray.

Publications

Specialty Journals.—The Board reviewed: (*a*) purposes and objectives of the specialty journals; (*b*) programs of the journals in relation to the over-all program of the A. M. A. in the scientific area; (*c*) groups to which the circulation of the journals should be directed; and (*d*) functions of the editorial boards; and established the following policies:

(1) That a committee of the Board meet with the Chief Editors at least once every year;

(2) That nominations for membership on the editorial boards may be received from the editorial board, through the Chief Editor, appropriate specialty societies, or any other fruitful source;

(3) That editorial co-sponsorship by specialty organizations of the A. M. A. specialty journals be approved in principle, including representation on the editorial boards from the specialty groups with whom the affiliation is established;

(4) That members of the editorial boards be appointed for terms of two years, retroactive to January, 1953, so arranged that the terms of one-half of the membership expire in one year and the other half the following year, with a maximum of five consecutive terms;

(5) That the Chief Editor be appointed for terms of two years, with reconsideration at the end of each two years, but with a maximum of five consecutive terms as Chief Editor;

(6) That the above policy with reference to two-year terms for members of editorial boards will become effective January, 1960, but that not more than three retiring members shall be removed in any one year.

At its meeting in Atlantic City the Board recommended that (1) in addition to THE JOURNAL of the American Medical Association, each dues-paying member may receive a specialty journal of his choice as a benefit of membership and that (2) the prime objective of the specialty journal shall be the publication of scientific information for the field of interest of that journal. This recommendation has since been carried out.

A report on the above recommendations was presented to the House of Delegates at its meeting in Atlantic City (supplementary report J).

Quarterly Cumulative Index Medicus.—Negotiations were completed for a joint project of the American Medical Association and the National Library of Medicine, to be initiated in January, 1960. The National Library of Medicine will index the significant journals, and the A. M. A. will publish a cumulated index once a year. This action made it unnecessary to continue the current Quarterly Cumulative Index Medicus, which had been published by the A. M. A. for many years. A report on this action of the Board also was reported to the House in Atlantic City in June (supplementary report J).

A. M. A. Archives of Neurology and Psychiatry.—The Board after considerable discussion with various individuals and groups, voted that the *A. M. A. Archives of Neurology and Psychiatry* be divided into two periodicals, the *Archives of General Psychiatry* and the *Archives of Neurology,* to be devoted to clinical neurology as well as the wider aspects of the field. The first issue of the two new periodicals was July, 1959.

Committees of the Board

Appointments.—The Board appointed an *ad hoc* advisory committee to review the present scientific programs staffed by the Division of Scientific Activities, including their history, present status, and probable future, for the purpose of determining their effectivenes and recommending their future course. A two and one-half day meeting of this committee at Hershey, Pa., is planned in September, 1959.

Terms of Service.—In February, 1959, the Board adopted the following policies for its Standing Councils and Committees:

(1) That the term of service be one year subject to reappointment for a maximum of 10 years, retroactive to Jan. 1, 1953;

(2) That the membership be "frozen" for the remainder of the year 1959;

(3) That a panel of competent eligible individuals be developed, who could serve on a committee or council effectively; that such panel be derived from the committee or council concerned, state and county societies, and other sources.

The Board hopes to put these new rules into effect by Jan. 1, 1960.

Reports.—Reports from several of the ad hoc committees of the Board were submitted at the June, 1959, meeting of the House of Delegates. They were:

Committee on Amphetamines and Athletics
(supplementary report I)
Committee on Preparation for General Practice
(Handbook and THE JOURNAL [170:681-684 (June 6) 1959])
Commission on Medical Care Plans
(submitted in December, 1958; acted on by the House in June, 1959)
Joint Committee to Study Paramedical Areas in Relation to Medicine
(supplementary report E)
Medical Disciplinary Committee
(supplementary report H)
Committee on Nursing
(supplementary report D)
Joint A. M. A.-American Bar Association Committee on Narcotic Drugs
(supplementary report G)
A. M. A.-American Hospital Association Medicolegal Education Committee
(supplementary report F)

Annual reports herewith submitted from other *ad hoc* committees of the Board are as follows:

Committee on Medical Aspects of Automobile Injuries and Deaths
Committee on Medical Aspects of Sports
Committee on Medical Rating of Physical Impairment
Committee on Relationships Between Medicine and Allied Health Agencies
Joint Committee on Health Problems in Education of National Education Association and American Medical Association

Committee on Medical Aspects of Automobile Injuries and Deaths.—The major report of the Committee, "Medical Guide in Determining Fitness to Drive a Motor Vehicle" was published in THE JOURNAL (169:1195-1707 [March 14] 1959) and reprinted for distribution.

The American Association of Motor Vehicle Administrators requested A. M. A. cooperation in developing medical standards for driver licensing and in evaluating present standards. The Committee was assigned to represent the A. M. A. Work has started on guides to licensing authorities. These guides include a medical history, a screening physical examination for driver license applicants for administration by lay examiners, and an examination to be given by physicians to those applicants not passing the screening examination.

Staff Activities.—The Secretary staffed the exhibit "Physician's Responsibility in Highway Accidents" at meetings of the Ohio State Medical Association, the Illinois State Medical Society, and the American Medical Association.

The Secretary assisted in the preparation of statements to the Council on Legislative Activities in regard to proposed federal legislation on motor vehicle safety.

The report of the Committee "Medical Guide for Physicians in Determining Fitness to Drive a Motor Vehicle" was reprinted. The Secretary has devoted much staff time in replying to requests for the publication and in answering inquiries concerning the medical aspects of automobile injuries and deaths.

Committee on Medical Aspects of Sports.—The Committee on the Medical Aspects of Sports of the American Medical Association (formerly the Committee on Injury in Sports) was appointed by the Board of Trustees in 1956 at the suggestion of various athletic groups. Chief purpose of the Committee is to advise such groups on the health aspects of athletics including the prevention and control of athletic injuries. Because of its broader interests and the desire for positive approaches to the injury problem the Committee was renamed, as indicated above, by the Board of Trustees in June, 1959.

Present membership of the Committee is as follows: Allen J. Ryan, M.D., Chairman; Carl E. Badgley, M.D.; Harold P. Muller, M.D.; Francis Murphey, M.D.; Owen B. Murphy, M.D.; William D. Paul, M.D.; Thomas B. Quigley, M.D.; Augustus Thorndike, M.D., and Fred V. Hein, Ph.D., is Staff Secretary.

Actions and contributions of members in the development and carrying out of Committee functions are given below (some of these contributions are of an individual nature made by one member; others involve general action and service by all of the members):

(1) Reviewed records and statistics on head injuries in football and the possible relation of these injuries to the need for improvement of football helmets. The Committee also heard reports on research done on helmets and consulted with manufacturers concerning these. Some members (those working directly with footballs squads) are now using improved models and attempting to appraise the new types.

(2) Set up liaison with the Committee on Injury and Safety in Sports of the National Collegiate Athletic Association through the inclusion on the N. C. A. A. Committee of one of the members of the A. M. A. Committee on the Medical Aspects of Sports. (At the present time Dr. Allan J. Ryan, Chairman of A. M. A.'s Committee, holds the liaison membership.)

(3) Submitted ideas for, recommended the development of, and reviewed for publication the following items:

(*a*) "Protecting the Health of the High School Athlete," outlining ways in which schools and local medical societies can work together to assure proper health supervision of athletes.

(*b*) "The Bill of Rights for the College Athlete," stressing the importance of careful coaching, good officiating, right equipment, and proper medical care in the prevention of injuries.

(*c*) A series of pertinent short statements on various aspects of health and safety in athletics for promulgation to high schools. (Examples—"The All-American Diet," "Sleep and Sports," "First-Aid Recommendations".)

(*d*) "Safeguarding the Health of the High School Athlete," a checklist for appraising the health aspects of the high school athletic program.

(*e*) "Tips on Athletic Training," a compendium of statements on matters of conditioning and health practices in the field of sports.

(4) Cooperated with the Section on Orthopedic Surgery in the development of a symposium covering the medical aspects of sports at the June, 1959, Atlantic City Annual A. M. A. meeting.

(5) Participated as speakers in a number of postgraduate courses and conferences on the control of athletic injuries and other phases of sports medicine.

(6) Made suggestions, located speakers, recommended program participants in connection with the projected National Conference on the Medical Aspects of Sports to be sponsored by the American Medical Association under the auspices of the Committee at Dallas, Texas, immediately preceding the Clinical meeting, Nov. 30, 1959.

(7) Served as liaison and prepared articles and presentations for such organizations as the American College of Surgeons, American College of Sports Medicine, Pan-American Sports Congress, and other groups having similar committees and/or interests.

The Staff Secretary, in addition to his other duties as consultant in health and fitness for the Department of Health Education, aided the Committee in the implementation of the above plans and program in the following ways:

(*a*) Provided the detail work essential to the preparation and publication of Committee statements, recommendations, and pamphlets.

(*b*) Made arrangements with appropriate officials for joint activity with such groups as the National Federation of State High School Athletic Associations, the National Collegiate Athletic Association, and the National Association of Intercollegiate Athletics.

(*c*) Worked out methods for publicizing and disseminating materials prepared by the Committee including announcements of availability in appropriate medical and educational periodicals.

(*d*) Made mechanical arrangements for meetings of the Committee including the projected National Conference on the Medical Aspects of Sports at Dallas, Nov. 30, 1959.

(*e*) Carried on the necessary correspondence for the Committee, prepared its minutes and reports and otherwise performed the usual and expected duties of a secretary.

Committee on Medical Rating of Physical Impairment.—The Committee on Medical Rating of Physical Impairment is an *ad hoc* committee of the Board of Trustees. Its members are: Raymond M. McKeown, Chairman, George F. Gsell, Henry H. Kessler, Quentin W. Mack, and O. A. Sander. Mr. George W. Cooley and Mrs. Mary Van De Warker serve the Committee as staff members, and Mrs. Marjorie W. Grigsby as consultant.

The Committee was appointed by the Board of Trustees in 1956 and held its first meeting in December of that year. Its purposes are: (1) the establishment of guides to the evaluation (rating) of permanent impairment for use by the medical profession; and (2) liaison with the Bureau of Old-Age and Survivors Insurance (BOASI) and its Medical Advisory Committee (MAC) on medical matters under the BOASI program for the disabled.

The Committee met twice last year, once in Chicago and once in Boston. Additionally, individual members and/or consultants have met with the staff 18 times to work on specific assignments.

The majority of these meetings has been in connection with the development of further guides. The Committee currently uses two procedures for this purpose. Under either procedure, however, certain preliminary work is always required in the preparation of the original draft of any guide. This preliminary work requires a number of meetings of the individuals responsible for preparing the original draft at which they first review all pertinent literature and explore the problems inherent in rating impairment of the particular body system under consideration. Then, as the meetings progress, written material, based on the discussions, evolves. The final step involves careful and often numerous revisions by the responsible individuals until a suitable original draft is completed. For these reasons both individual meetings and the entire series of meetings are often protracted.

Under the first procedure established by the Committee for the development of a guide, certain members of the Committee prepare the original draft. This draft is then sent for prior review, with an explanation of the Committee's basic philosophy and responsibilities, to a group of specialists selected by the Committee as consultants. The consultants then meet with the originators of the draft and make any suggestions for its revision. Those suggestions compatible with the Committee's aims are then incorporated in the final draft of the guide which is submitted to the Committee for consideration.

Under the second procedure, the Committee appoints specialists in a given field to prepare the original draft under the chairmanship of a member of the Committee who has been appointed by the Committee as a whole. The original draft is then submitted to a group of consultants selected by the Committee. The meeting of the two groups, revision of the original draft, and submission of the final draft to the Committee is arranged as outlined under the first procedure.

Upon approval of the newly developed guide by the Committee, it is sent to the Board of Trustees for action. Upon approval by the Board and prior to publication, the guide is again referred to each consultant for consideration. He is asked to indicate to the Committee in writing whether or not he wishes his name listed as a consultant in the published guide.

To date, two guides have been published, a third is completed and three others are in preparation.

The first guide (on the extremities and back) was prepared under the first procedure. Two members of the Committee, Dr. Kessler and Dr. Mack, prepared the original draft which was submitted to the following consultants, all of whom are listed in the guide: Frank H. Krusen, Earl D. McBride, Carl O. Rice, Chester C. Schneider, Earl C. Steele, and Julian H. Bigelow, Ph.D., Joseph E. Markee, Ph.D., and Mr. James J. Reid. This 112-page guide was published as the first Special Edition of The Journal of the American Medical Association on Feb. 15, 1958. Since its publication the Committee has received over 6,000 requests for 18,000 copies from the 50 states, Puerto Rico, and 28 foreign countries. The response to the guide was most encouraging; hundreds of requests contained favorable comment. Less than a dozen letters have been received expressing dissatisfaction with one or more aspects of the guide, and in most cases constructive suggestions were made on ways to eliminate the objections.

Publication of the first guide has also brought a number of requests for members of the Committee to speak at meetings of medical and interested lay groups such as the International Association of Industrial Accident Boards and Commissions, and the American Railroad Association. Committee members have endeavored to fill as many of these requests as possible.

At the 1958 Annual Meeting, however, it became apparent that certain differences of opinion existed between the American Academy of Orthopedic Surgeons and the Committee. These differences appear to stem for the most part from the philosophical concepts expressed in the first guide. After some discussion it was agreed that it would be advantageous for a committee of the American Academy of Orthopedic Surgeons to study the guide and to make recommendations to be considered by the Committee in making any revision. Such a committee has been appointed and plans to meet this fall under the chairmanship of Dr. Earl D. McBride. A member of the Committee on Medical Rating, Dr. Kessler, has accepted an invitation to serve on this committee of the American Academy of Orthopedic Surgeons.

The second guide (on the visual system) was prepared under a modification of the first procedure because of existing A. M. A. reports. A Committee member, Dr. Gsell, conferred with the following consultants, appointed by the Committee and all of whom are listed in the guide: Ralph W. Danielson, Charles E. Jaeckle, and Harold Scheie. This guide was published as a Special Article in the Sept. 27, 1959, issue of The Journal of the American Medical Association. Since its publication 2,400 requests for 4,600 reprints have been received from the 50 states, Puerto Rico, and 9 foreign countries, including one behind the iron curtain. There have been many favorable comments and no dissatisfaction expressed to the Committee.

The third guide (on the cardiovascular system) was prepared under the second procedure established by the Committee and will be submitted to the Board for consideration.

In accordance with its second procedure, the Committee appointed one of its members, Dr. Kessler, as chairman and also appointed the following specialists to develop the original draft of the cardiovascular guide: Richard J. Clark, William A. Leff, Leonard J. Goldwater, and James V. Warren. After five meetings during the first year, the original draft was completed. It consisted of three sections: (1) organic heart disease; (2) hypertensive vascular disease; and (3) peripheral vascular disease. In the past year the original draft was submitted to the following consultants selected by the Committee: David I. Abramson, Edward F. Bland, Lewis Bronstein, S. Charles Franco, Hugh Montgomery, Jack Myers, Thomas W. Parkin, Oglesby Paul, Donal R. Sparkman, W. D. Stroud, and J. Allen Yager.

At the meeting with the consultants, the first two sections were found to be generally acceptable but it was felt that the third secion (peripheral vascular disease) needed further development. Dr. Warren, who had been responsible for this section, then met with Dr. Abramson and Dr. Montgomery to expand this material. After several meetings this section was completed and incorporated in the final draft of the guide which has been approved by the Committee.

The cardiovascular guide presented problems which had not been encountered previously by the Committee and were in urgent need of resolution. The chief difficulty arose from the lack of recognized standards except for the American Heart Association's functional and therapeutic classification and for grading retinopathy. This guide is, then, a first effort of its kind to enable all physicians to evaluate impairment competently without undue recourse to highly specialized and sometimes unavailable function tests.

In December, 1956, work on the pulmonary guide was begun. Under the chairmanship of a Committee member, Dr. Sander, the following specialists are preparing the original draft: Edgar Mayer, J. Burns Amberson, and George Wright. From the beginning this group has encountered difficulties arising from the nature and multiplicity of pulmonary disturbances, their sequelae, and of function tests. Concurrent obligations of the individuals involved have also made the arrangement of meetings difficult. Despite these problems, the group has worked earnestly to produce a suitable original draft which will be discussed at the next meeting of the Committee.

Two other guides are now in the process of preparation. One of the peripheral nerves affecting the extremities is being prepared in original draft form by two members of the Committee, Dr. Kessler and Dr. Mack, with the assistance of Joseph H. Markee, professor of anatomy of Duke University Medical School. A consultant group will be selected when the original draft is ready for submission.

The subject matter of this guide confronts the group with several difficult questions. How is pain to be considered in evaluation of permanent impairment? How can muscle strength be measured accurately and how is its loss to be evaluated? How impairing is sensory loss caused by a nerve lesion? The development of this guide is contingent upon the resolution of these and other questions as they may arise.

The other guide now in preparation is concerned with otolaryngology. A member of the Committee, Dr. Gsell, is the chairman and the specialists appointed by the Committee to prepare the original draft are: John Bordley, Aram Glorig, Dean Lierle, Daniel Miller, and Younger Staton. Harold Westlake, Ph.D., is working on speech impairment problems with the group. The first meeting was recently held at which time an outline of the guide was completed.

It is anticipated that guides for the gastrointestinal, genitourinary, hemic and lymphatic, endocrine, and central nervous systems and the skin will be undertaken as quickly as possible.

Representatives of the W. B. Saunders Company called on the Committee chairman, Dr. McKeown, regarding the possibility of publishing the guides either in a single book or a series of volumes. This proposal will be discussed by the Committee at its next meeting.

BOASI.—The second purpose of the Committee is to maintain liaison with BOASI and its Medical Advisory Committee. The Committee is invited to attend as observers each of the MAC meetings (usually 2 a year) and a copy of the written summary of these proceedings is sent to the Committee after each such meeting.

Sometime ago, BOASI suggested rather informally that the A. M. A. co-sponsor a film instructing physicians in the preparation of medical reports and the use of medical evidence in the process of disability determinations. The Committee suggested to the representatives of BOASI that a formal proposal be made for approval of the Board of Trustees. A letter of agreement was submitted to Dr. Blasingame just prior to the 1959 Annual Meeting. The letter has since been signed and returned to BOASI. The staff will meet in the near future with BOASI representatives to develop a working arrangement.

At the 1958 Annual Meeting, Resolution 23, introduced by the Medical Society of the State of New York, was adopted by the House of Delegates. The resolution was referred to the Committee on Medical Rating for implementation.

Resolution 23 had two resolves:

(1) *Resolved,* That this House of Delegates of the American Medical Association advocate that the schedule of allowances by the aforesaid Bureau of Disability Determinations be not lower than that adopted for the fee schedule of allowances under the Medicare Program in the various states.

(2) *Resolved,* That the Secretary of the American Medical Association is hereby requested to send a copy of this resolution to each constituent association.

The Committee on Medical Rating studied the resolution and then submitted a report to the Board through Dr. Blasingame, recommending that the resolution be not implemented and spelling out in some detail the reasons for this recommendation. The Board approved the report and transmitted it to the House of Delegates. At the Minneapolis Clinical Session the Reference Committee on Insurance and Medical Service concurred in the recommendation of the Committee and approved by the Board. However, the House of Delegates adopted the following amendment to the Reference Committee report:

The appropriate committee of the A. M. A. should be empowered to meet with representatives of the BOASI in Washington to develop a method by which each state medical society can reach an agreement directly with the BOASI concerning medical service rendered within each state under this program.

The Committee on Medical Rating is now studying this amendment.

Committee on Relationships Between Medicine and Allied Health Agencies.—Members of the Committee are: Drs. Sidney J. Shipman, Chairman, San Francisco, California; Paul A. Davis, Akron, Ohio; Paul C. Swenson, St. Paul, Minn.; Alfred Popma, Boise, Idaho; Leonard W. Larson, Bismarck, N. D.; Louis A. Buie, Rochester, Minn.; David B. Allman, Atlantic City, N. J.; and David A. Wood, San Francisco. Staff members are: Mr. George W. Cooley, Secretary; Dr. Donald Dukelow, Consultant; Mr. Donald Berg, Research Associate; and Miss Barbara Farley, Staff Assistant.

The Committee has met on two occasions during the past year—in Minneapolis, Dec. 5, 1958, and in Chicago, April 18-19, 1959.

Committee Activity.—The Committee's booklet "Suggested Guides to Relationships Between Medical Societies and Voluntary Health Agencies" which was published last fall, has had wide acceptance by medical societies and voluntary health agencies. To date, more than 50,000 copies of these Guides have been distributed and requests are still received. The Committee has been informed that these Guides have been used by voluntary health agencies and medical societies as a basis for organizing liaison committees at the local and state level.

Resolutions.—Substitute resolution 7 was approved by the House of Delegates at the December, 1958, Clinical Session and submitted by the Board of Trustees to the Committee for comment. The resolution concerned the feasibility of initiating a national conference of representatives of National Voluntary Health Agencies and United Funds to resolve problems involving fund raising practices by both groups. At the Dec. 5 meeting of the Committee, the resolution was discussed at length and the Committee's recommendations were sent to the Board of Trustees in a memo dated Jan. 6. In essence, this memo stated that the Committee had held meetings with both of the groups concerned and therefore offered its services to the Board if such a national conference was contemplated.

Resolutions 3, 4, and 18 which were submitted to the Board of Trustees at the House of Delegates' 1959 Annual Session concerned relationships between medical societies and The National Foundation. The Board of Trustees, in turn, referred these resolutions to this Committee for study and necessary action.

Meetings.—During the past two years the Committee has held meetings and conferences with representatives of the American Cancer Society, American Heart Association, National Tuberculosis Association, The National Foundation, and other voluntary health agencies. Representatives of United Funds and Councils of America have also been invited to discuss their activities. The Committee believes that these meetings have been beneficial to organized medicine, voluntary health agencies, and United Funds. Also, as a result of these meetings the Committee has been better able to inform physicians and medical societies on the various programs and policies of these health agencies.

Joint Committee on Health Problems in Education of National Education Association and American Medical Association.—The Annual Meeting of the Joint Committee was held at the Drake Hotel, Chicago, March 11-13, 1959. The Committee spent the greater portion of this meeting reviewing manuscripts which ultimately will become the fifth edition of a book entitled "Health Education."

The Editors preparing this edition of "Health Education" are Bernice Moss, Ed.D., professor of health education, Utah University; Warren Southworth, Dr.P.H., professor of health education, University of Wisconsin; and John L. Reichert, M.D., professor of pediatrics, Northwestern University. On completion of the revision, the Joint Committee plans a second edition of "School Health Services," work on which will start in 1960.

A major function of the Joint Committee is the preparation of pamphlets and brochures describing medically and educationally sound policies and practices in the school health program.

During this year, the Chairman of the Joint Committee was E. H. Pawsat, M.D. (A. M. A., Fond du Lac, Wis.); Vice-chairman, Lloyd S. Michael, Ed.D. (N. E. A., Evanston, Ill.); Secretary, Donald A. Dukelow, M.D. (A. M. A., Chicago). At the Annual Meeting the following officers were elected for 1959-1960: Lloyd S. Michael, Ed.D., Chairman; Jay J. Johns, M.D. (A. M. A., Taylor, Texas), Vice-chairman; and Donald A. Dukelow, M.D., Secretary.

Miscellaneous Reports

Report on Matters Referred by House of Delegates in June, 1959.

Traffic Safety.—Resolution 26 endorsed the issuance of a special postage stamp for traffic safety.

This resolution was transmitted to the Post Office Department. Mr. Franklin R. Bruns Jr., Director, Division of Philately of the Post Office Department, replied that the proposal was carefully reviewed by the Department's Citizens' Stamp Advisory Committee which recognized its value but decided it was not possible to recommend such a stamp in the 1960 program. Mr. Bruns stated that the proposal would be considered again, however, in the future.

Public Relations and Public Information.—The House urged even greater emphasis on the liaison program with magazine editors, free lance writers, and other principal sources of public information.

The staff is implementing to the fullest extent this recommendation. In June and July, 14 national magazines requested material on medical or related subjects, or review of articles. Twenty-three articles appeared in June issues of mass circulation magazines, most of which presented a favorable image of the physician.

McDowell Commemorative Stamp.—The Board reported in June, 1959, that the Postmaster General indicated, in response to a request that a commemorative stamp be issued in honor of Dr. Ephraim McDowell, that it was not possible to include this stamp in the 1959 schedule.

The Board can now report that such a stamp will be issued in December, 1959, at Danville, Ky.

Armed Forces Institute of Pathology.—Resolution 37 reaffirmed the position taken at Minneapolis in December, 1958, recommending the establishment of flag rank for the Director of the Armed Forces Institute of Pathology during his tenure of office and actively supported S. 1925, 86th Congress, which provides that an officer of the Army, Navy, or Air Force who is assigned to service as Director of the Armed Forces Institute of Pathology, shall hold a rank of not less than brigadier general, or rear admiral, as the case may be, while so serving.

In accordance with the directive of the House, copies of the resolution were transmitted to the President of the United States and other appropriate individuals and officers. All have indicated, in acknowledgment, that such action is not compatible with existing or projected policies regarding military rank.

Osteopathy.—The American Osteopathic Association has appointed a liaison committee to meet with a similar committee of the American Medical Association. The Board, in accordance with the House action in June, 1959, has appointed an A. M. A. liaison committee. No meeting of the two has occurred yet.

Distinguished Service Award.—The Board wishes to urge that members of the Association submit nominations for the Distinguished Service award. If possible, these nominations should be received in the office of the Executive Vice-president by March 1, 1960.

COUNCIL ON DRUGS

Council Activities

Pursuant to its fundamental program for evaluation of scientific data and dissemination of unbiased information on commercial preparations of drugs, the Council, individually (as referees) and collectively, completed actions leading to publication in The Journal during the current annual period of the following statements for ultimate inclusion in its annual publication, New and Nonofficial Drugs: monographs on 39 new or previously unevaluated drugs; supplemental statements on new uses of 4 previously evaluated drugs.

The Council collectively considered and sponsored publication in The Journal of 10 special reports covering a wide variety of therapeutic subjects (exclusive of those issued by its standing Committees on Pesticides, Research and Toxicology). These included several reports by outside experts dealing with the current status of therapy in such clinical disorders as infantile diarrhea, bronchial asthma and rheumatic fever. There were two reports of broader significance: (1) factors influencing the clinical evaluation of drugs; and (2) oral medication for prolonged action. The Council also published the first two of a series of six papers presented at its previously sponsored Symposium-Panel Discussion on The Use And Abuse of Adrenal Steroids which was held in Washington, D. C., on Sept. 25, 1958.

The Council, through its three-member intramural committee on nomenclature, and as a whole, separately considered and adopted nonproprietary names for a total of 74 new chemical or biologic agents expected to be or recently introduced for clinical use (these names are not for publication except in conjunction with statements or reports on drugs). The members of this committee serve individually as referees in the negotiation of nonproprietary terminology with American commercial sources. Dr. Windsor C. Cutting was appointed to serve as chairman of the committee following the untimely death of Dr. Elmer M. Nelson on Dec. 24, 1958.

The Council held its annual meeting at A. M. A. headquarters on Nov. 21-22, 1958, to receive the previous annual report of its own activities and those of its three standing committees; to elect a chairman and vice-chairman; and to consider special problems and questions of policy. All except three members attended. Dr. Torald Sollmann and Dr. James P. Leake were re-elected chairman and vice-chairman respectively. A unique feature of the meeting was the participation, for the first time, of two guest physicians engaged in full-time practice, who were invited to take part in the discussions and to express their views of the work of the Council. Both physicians revealed that there was a considerable lack of appreciation by the medical profession regarding the care with which the Council critically compiles and provides information on drugs. Their comments, subsequently summarized in a special article by the *AMA News*, indicated that the Council's statements could be made more appealing by changes in style or format and that expert promotional methods were needed to gain the interest of more physicians.

A major part of the agenda of the annual meeting was centered upon a discussion of various ways and means to foster wider readership of Council statements in The Journal and to increase the distribution of the Council's annual publication, New and Nonofficial Drugs. The Council voted to give greater prominence to trade names in its descriptions of drugs by placing them immediately after the nonproprietary titles of monographs and in the titles of supplemental statements; to identify commercial sources of drugs in the index of future editions of the book; to include an alphabetical appendix of the complete organizational names and addresses of these sources; to indicate the year of commercial introduction in conjunction with the publication of monographs on new drugs; and, as far as possible, to add such information to the descriptions of all drugs included in subsequent editions of the book. Also adopted was a motion to appoint an ad hoc committee to consider various suggestions for re-titling the book and the over-all problem of increasing its distribution to physicians; a committee composed of three members, subsequently appointed by the Chairman of the Council, explored this matter and forwarded comments for discussion in the Council bulletin and at the next annual meeting. Suggestions of this committee and other members of the Council for encouraging wider use of the book by physicians included (1) reconsideration of the former custom of distributing free copies to all sophomore medical students, (2) a forceful campaign to circularize directly physicians, hospitals, and libraries concerning the features of the book, and (3) distribution of each annual edition as a part of A. M. A. membership either by absorbing the cost or by an increase in dues.

Because Council-published statements still are being misconstrued by some readers as a form of approval, notwithstanding the termination of the seal-acceptance program in 1955, the Council further voted to preface all future descriptions of New and Nonofficial Drugs in THE JOURNAL with a revised introductory statement to disclaim any implication of endorsement.

The Council adopted a proposal to recommend to the Board of Trustees that the Council's Committees on Pesticides and Toxicology be united to form a separate Council on Toxicology. This matter is under consideration by the Board.

On the basis of a suggested outline of topics for a proposed symposium on acute injuries, the Council voted that Dr. F. A. Simeone undertake the chairmanship and organization of a committee to plan a program on this subject to be held in Cleveland during 1959. Dr. Simeone, together with the Chairman and Secretary of the Council, met in Cleveland on March 18, 1958, with representatives of the Academy of Medicine of Cleveland and Cuyahoga County Medical Society, Western Reserve University School of Medicine, the Ohio State Medical Society and the Ohio Committee on Trauma of the American College of Surgeons to select topics, speakers, and the date and place in Cleveland for a Symposium on the Therapy of Acute Injuries. The Auditorium of the Allen Memorial Medical Library in Cleveland and Oct. 7, 1959, were selected as the place and date for the program.

At the request of its Committee on Research, the Council approved, for consideration by the Board of Trustees, a recommendation that the Committee on Research establish a Subcommittee on Adverse Reactions of Drugs on the Central Nervous System. During this report period the Board had not had an opportunity to act on this recommendation.

During the latter part of this annual period the Council adopted a staff-prepared statement on Penicillin and Other Antibiotics in Milk, a problem arising from the use of animal mastitis preparations of antibiotics by dairy farmers, which had been assigned to the Council for study in conjunction with a resolution introduced at the A. M. A. Clinical Meeting in Minneapolis, Dec. 2-5, 1958.

Staff Activities

The activities of the staff of the Council on Drugs which include implementation of Council actions are summarized under the following categories:

Drug Evaluation.—Over the period of this report, the professional staff selected and transmitted to more than 200 outside consultants in the basic and clinical medical sciences, for their review and opinions, copies of scientific data (usually obtained through the cooperation of interested manufacturers) in conjunction with the Council's fundamental program for evaluation of drugs.

During the same period the staff drafted statements and prepared reports for consideration by the Council, individually and collectively, on a total of 39 new or previously unevaluated drugs and on new uses of 4 previously evaluated drugs for which statements were published in THE JOURNAL. Preparation of statements on drugs for publication by the Council entails creative writing and the exercise of medical judgment on the part of the professional staff, so that they may properly reflect as well as reconcile the shades of expert opinions expressed by consultants and individual members of the Council. In addition to contacts with consultants and individual members of the Council, preparation of each statement requires intensive study and writing by one medically trained individual for the equivalent of approximately 3 to 4 full working days. All drafted statements for publication are pre-edited for THE JOURNAL by the Department Publications Staff before presentation to the Council. Following Council consideration, the staff transmits statements for publication to cooperating manufacturers for comment, and considers their valid suggestions for revision prior to release to THE JOURNAL.

Over-all revision of the 1959 edition of the Council's annual book publication, New and Nonofficial Drugs (to accommodate the inclusion of 41 new drug monographs, and the exclusion of 12 monographs on drugs no longer requiring description or no longer commercially available) was directed by the staff with the editorial supervision of the Department Publications Section. Release of the 1959 edition of the book, for the first time in January of the publication year, was highlighted by a staff-prepared editorial in THE JOURNAL of Jan. 31, 1959, and by a special announcement in the *AMA News*.

The Secretary and other professional members of the staff supervised the preparation of the Council's bi-weekly confidential bulletin which is regularly composed by the stenographic personnel and circulated to members of the Council, together with scientific data on new drugs. The Council's bulletin is used to expedite the consideration of reports and to record transactions of meetings, committee functions, and special announcements. All departmental correspondence, memoranda, statements, and reports formulated by the professional staff, including the stenciling of Council bulletins, is transcribed by nonexempt personnel.

The Secretary prepared an explanatory statement which appeared in THE JOURNAL of Feb. 28, 1959, and simultaneously implemented, on the basis of Council actions, the following changes in the operation of the drug evaluation program: prefacing of descriptions of New and Nonofficial Drugs published in THE JOURNAL with a revised introductory statement to disclaim endorsement; placing of trademark names at the beginning rather than at the end of monographs; identification of commercial sources of drugs for the index of future editions of the book.

The staff instituted, with the cooperation of the Editor, listing of the names of drugs on the cover of THE JOURNAL in those issues in which the Council's statements appear, so as to attract the attention of more readers. The staff also took steps to employ, with some flexibility, additional subheadings in monographs to increase the accessibility of varied information on new drugs.

Nonproprietary Terminology.—The Council staff, with the assistance of the staff of the Chemical Laboratory and the advice of individual members of the Council's intramural committee on nomenclature, separately presented for adoption by the Council as a whole nonproprietary names for a total of 74 new chemical or biologic agents expected to be or recently introduced for clinical use. All nonproprietary terminology was considered in cooperation with interested American commercial sources and, with their permission, also transmitted prior to final adoption for consideration by the U. S. P., N. F., NIH (addicting drugs and biologics only), WHO and BPC.

The staff met informally at headquarters with legal representatives of several pharmaceutical manufacturers on May 13, 1959, to review for them the Council's cooperative arrangement with the foregoing outside agencies in the consideration of nonproprietary terminology.

Special Reports.—The professional staff screened and prepared for Council bulletin consideration, with the editorial assistance of the Department Publications Section, a total of 10 Council-sponsored special reports on various aspects of therapeutics which appeared in THE JOURNAL in addition to those sponsored by its standing committees. These included such subjects as the current status of therapy in particular clinical problems, the first two papers from the previously sponsored Symposium-Panel Discussion on The Use and Abuse of Adrenal Steroids presented in Washington, D. C., Sept. 25, 1958, and two articles of broader therapeutic significance; factors influencing the clinical evaluation of drugs; oral medication for prolonged action. Typescript copies prepared from a tape-recording of all six symposium presentations and the panel discussion were screened by the professional staff, forwarded for editorial review by the speakers, and otherwise readied for consideration and serial publication by the Council.

The Secretary, on approval of the Council, transmitted for consideration by the Board of Trustees a recommendation of the Committee on Research for the proposed establishment of a Subcommittee on Adverse Reactions of Drugs on the Central Nervous System.

The Secretary initiated a study and prepared a statement on Penicillin and Other Antibiotics in Milk, based upon information obtained from the Food and Drug Administration, the American Veterinary Medical Association, and a selected group of allergists. This matter was presented to the Council in conjunction with a resolution introduced at the Clinical Meeting in Minneapolis, Dec. 2-5, 1958, concerning the use of animal mastitis preparations sold directly to dairy farmers. The statement as adopted by the Council and transmitted by the Secretary for consideration by the Board of Trustees at the close of the period of this report was subsequently released for publication as a Council report in accordance with the advice that it need not be reviewed by the Trustees.

Meetings and Programs.—The Secretary, with the advice of the chairman and other members of the Council, scheduled, prepared the agenda, and conducted the Council's annual meeting at headquarters on Nov. 21-22, 1958. In addition to the implementation of changes in operation of the drug evaluation program (noted above), the Secretary also recorded and implemented in the Council bulletin the following further transactions of the meeting: appointment by the chairman of an ad hoc committee of three members to consider a more appealing title for New and Nonofficial Drugs and other ways or means to encourage its distribution; the decision to publish the presentations made at the Symposium-Panel Discussion on The Use and Abuse of Adrenal Steroids (noted above); a motion to ask Dr. F. A. Simeone to serve as chairman and organize a program committee with two other members of the Council and representatives of interested local medical groups to plan a Cleveland symposium on the management of acute injuries.

Upon the subsequent advice of Dr. Simeone, the Secretary implemented formation of the program committee and conducted a meeting on March 18, 1959, in Cleveland to select topics, speakers, and the date and place for the symposium. As of the close of the current report period, plans were completed, in cooperation with the Academy of Medicine of Cleveland and Cuyahoga County Medical Society, the Western Reserve University School of Medicine, the Ohio State Medical Association and the Ohio Committee on Trauma of the American College of Surgeons, to present a Symposium on The Therapy of Acute Injuries on Oct. 7, 1959, at the Auditorium of the Allen Memorial Medical Library of Cleveland. The American Academy of General Practice also gave its approval for an allowance of up to 5 hours of Category II credit for attendance by its members.

As a result of extensive discussion and action by the Council at its annual meeting, the Secretary also transmitted to the Board of Trustees a proposal that the Council's standing Committees on Pesticides and on Toxicology be united to form a separate Council on Toxicology.

Miscellaneous Activities.—In addition to direct replies to numerous outside inquiries concerning drugs, the professional staff provided comments and opinions on many manuscripts and reviewed several books referred from the Editor of The Journal. The staff also reviewed applications for the scientific exhibit at A. M. A. meetings referred from the Secretary of the Council on Scientific Assembly, as well as several motion picture films dealing with therapeutic subjects. The opinions of members of the Council also were polled and transmitted to the Law Division and the Council on Legislative Activities in connection with several proposed federal bills pertaining to drugs or therapy.

Professional Engagements and Personnel.—The Secretary presented a paper on Evaluation of New Therapeutic Agents at a symposium on Stress and Circulation sponsored by The Wayne County Chapter of The Michigan Academy of General Practice in Detroit on Jan. 7, 1959.

Dr. John C. Ballin, Assistant Secretary, attended the Sixth Annual Symposium on Antibiotics in Washington, D. C., Oct. 15-17, 1958, and the 18th Veterans–Armed Forces Conference on the Chemotherapy of Tuberculosis in St. Louis, Feb. 2-5, 1959.

Dr. Christian Wingard, formerly assistant professor of pharmacology at the University of Alabama School of Medicine and Dentistry, joined the headquarters staff on Feb. 2, 1959, as an Assistant Secretary of the Council. Dr. Wingard assists in the review of scientific data and preparation of statements on new drugs for publication by the Council.

Miss Cecilia Conroy, formerly employed as a junior pharmacologist, was engaged as a Staff Assistant on March 1, 1959, to aid the Secretary in the negotiation and consideration of nonproprietary names for new drugs.

The foregoing as well as further contemplated additions to the staff were expected to enable the Council to publish statements on new drugs more nearly coincident with their introduction for general clinical use.

COUNCIL ON FOODS AND NUTRITION

Council Activities

Currently, membership of the Council is: Charles S. Davidson, Chairman; John B. Youmans, Vice-chairman; George R. Cowgill, William J. Darby, Grace A. Goldsmith, Wendell H. Griffith, David B. Hand, Robert L. Jackson, Leonard A. Maynard, Robert E. Olson, and Clement A. Smith.

New projects were initiated and old ones that have proven of value were continued this year.

New Projects.—Interest in the relationship of diet to coronary heart disease has, at times this year, amounted to near hysteria. The Council, several members of which are active in this area of research, has recommended a conservative approach to major dietary changes. As a stabilizing influence, the Council has encouraged continued investigation, but it has also taken action. A committee studied the fat content of the diet, and has been charged with the responsibility of defining the frequently used terms, "low-fat," "moderate-fat," and "high-fat" diets. Dr. Hand, a member of the Council, is serving as chairman of the committee, of which Dr. Paul Day and Dr. George Mann are members. The rough draft of the report of the Committee has been completed and, if accepted by the Council, will be submitted for publication in The Journal of the American Medical Association.

Hypercholesteremia has been implicated by some as a direct correlative of coronary heart disease. Maintaining that the answer cannot as yet be given but that the profession should be kept informed, the Council requested statements from five investigators on "The Significance of Lowered Cholesterol Levels." These statements, to be published in The Journal in August, 1959, represent another new project of the Council; that is, to publish statements or short reports of investigators in areas of current research in which there is not agreement on findings or on the significance of findings.

Another area to which the Council has turned its attention this year is that of radioactivity in foods. The Council decided that a short general report on this subject should be published, followed by frequent reports of the amounts of radioactivity found in foods in various localities. The initial report is soon to be submitted to the Editor of THE JOURNAL.

A more formal cooperation with the American Dietetic Association was begun this year. A committee of physicians and dietitians was appointed to study and to define the frequently used, but seldom consistent "bland" or "low-residue" diet. It is hoped that the Committee, under the Chairmanship of Dr. Franz J. Ingelfinger, will soon be ready to present a rational definition and direction for use of this dietary regimen.

The Federal Food, Drug, and Cosmetic Act was amended in September, 1958, to allow for more complete control of food additives. The Council was pleased with this action, but recognized an added responsibility of the A. M. A. The Council has given serious consideration to the FDA's need for advice as to safety of the many thousands of substances added to foods during production, processing, and packaging.

A committee of the Council, organized several years ago, presented a report on "Vitamin Preparations as Dietary Supplements and as Therapeutic Agents." After preliminary consideration of this report, the Council submitted it for comments to the medical directors of the major pharmaceutical firms that manufacture and distribute vitamin preparations. Careful consideration was given to the many replies that were received from these consultants. In January, 1959, the statement was published in THE JOURNAL. Over 10,000 reprints of this statement on the proper use of multivitamin preparations have been distributed. It also has been added as a supplement to "Statements and Decisions of the Council on Foods and Nutrition."

Continuation of Existing Program: Symposiums.—In 1955, the Council decided to offer to the physician the opportunity of an intense one-day study of various current aspects of clinical nutrition. Usually six papers in a specific area are given by outstanding investigators. Time for thorough discussion is provided. These symposiums are directed toward the family practitioner, and the significance of the research findings to the general practice of medicine is emphasized. The symposiums are held in different locations each time and are cosponsored by local medical schools and medical societies.

As soon as possible following each of these meetings, the papers are published in THE JOURNAL and in monograph form for distribution. A special monograph, incorporating the papers given at the Council sponsored symposium on "Nutrition in Pregnancy" in October, 1957, was published. It was sent to each person who attended the symposium, in addition to the several hundred individual requests.

"Factors Involved in Formation and Diseases of Bone" was the subject of the fifth symposium, held at the University of Wisconsin, Oct. 16, 1958. Co-sponsors were the Medical School, University of Wisconsin, Dane County Medical Society, and the Charitable, Educational, and Scientific Foundation of the State Medical Society of Wisconsin. The papers presented were:

Historical Background of Vitamin D by Dr. H. T. Scott;
Mode of Action of Vitamin D by Dr. H. F. De Luca;
Clinical Indications for Use of Vitamin D Preparations by Dr. D. W. Smith;
Factors Influencing Tooth Formation and Repair by Dr. W. D. Armstrong;
Clinical Considerations in Bone Formation and Repair by Dr. D. M. Angevine and Dr. L. W. Paul;
Lathyrism and Bone Disease by Dr. I. V. Ponseti; and
Fall-out and Radioactive Strontium Utilization in Human Bone by Dr. Willard Libby.

The Council and Vanderbilt University Medical School cosponsored the next symposium which dealt with "Nutritional Problems in Medicine." The program, which was held May 8, 1959, included the following subjects:

Regulation of Electrolytes in the Management of Heart Disease by Elliot V. Newman, M.D.;
Diet and Diuretics in Hypertensive Heart Disease by Harriet Pearson Dustan, M.D.;
Role of Diet in Managing Coronary Heart Disease by Ashton Graybiel, M.D.;
Recognition and Management of Steatorrhea by Julian Ruffin, M.D.;
Celiac Disease and Pancreatic Fibrosis by Paul E. A. di Sant'Agnese, M.D.; and
Absorptive Difficulties Following Gastrointestinal Surgery by Parker Vanamee, M.D.

Cooperation with the Nutrition Foundation, Inc.—The Nutrition Foundation, Inc., New York City, is an organization formed by the food industry to support basic research and education in the science of nutrition. The Council has enjoyed excellent cooperation and support from the Foundation in its nutrition education program. In addition, certain reports are jointly sponsored for publication in THE JOURNAL by the Council and the Foundation. The following practical reports appeared during the past year.

1. Nutritional Management of Children with Diabetes Mellitus by R. L. Jackson, M.D., Sept. 6, 1958.
2. Low Sodium Diets by T. S. Danowski, M.D., Dec. 6, 1958.
3. Hereditary Galactose Disease by G. M. Guest, M.D., Dec. 13, 1958.
4. An Adequate Diet, by L. A. Maynard, Ph.D., May 20, 1959.
5. Diet in the Management of Peptic Ulcer by H. J. Shull, M.D., June 27, 1959.

Exhibit Symposium.—As a part of the scientific exhibit, a question and answer symposium was conducted during the A. M. A.'s Annual Meeting in Atlantic City, June, 1959. Thirty-two sessions were held. Under the general title of "Diet as a Preventive and Therapeutic Tool for the Doctor," subjects, such as diet in weight control, in cardiovascular disease, in the management of trauma, of the adolescent, and in the management of diabetes mellitus, were moderated by authorities in each area. The format of these meetings is a 15-minute introduction of current knowledge by the moderator, followed by a 30-minute period for specific questions from the audience. This represents the third year for such a program.

The Joseph Goldberger Award in Clinical Nutrition.—Annually, the Board of Trustees of A. M. A. cooperates with the Council in presenting the Joseph Goldberger award in Clinical Nutrition. This award is sponsored by The Nutrition Foundation, Inc. and consists of $1,000 and a plaque. It is presented for outstanding research in clinical nutrition. At the 1959 Annual Meeting of the A. M. A., Dr. Carl V. Moore of Washington University, St. Louis, was honored with the award for his work in iron metabolism and anemias. The "Goldberger Lecture," presented before the general session by Dr. Moore, was entitled "Iron Deficiency: Prevalence, Pathogenesis, and Problems in Prevention."

The Joseph Goldberger Fellowships.—The second annual group of fellowships was granted to 10 medical students for research in clinical nutrition. The fellowships, consisting of $600 each, are granted to outstanding students to carry on research during the nonacademic portion of their junior or senior school year. Application for these grants must be made by a faculty member who will supervise the study.

Each year these fellowships are given in honor of the previous recipient of the Joseph Goldberger award. Thus, the fellowships awarded in 1959 honored Dr. Virgil P. Sydenstricker and were for the following research: (1) niacin and niacin-containing cofactors in hepatic lymph; (2) the possible biosynthesis of vitamins A and D in fish; (3) the effects of iron stores and growth on iron absorption; (4) vitamin supplementation and the excretion of urinary oxalate; (5) cholesterol and carbohydrate metabolism; (6) studies on the rate of hydrolysis (in vivo and in vitro) of vitamin A esters; (7) the determination of body density of infants and children and the effect of diet on body composition; (8) an enzymatic and metabolic study of specific amino acids and the effect of certain nutritional conditions; (9) protein and amino acid requirements of rats following experimental injury; (10) the relationship of lipemia clearing to coronary artery disease.

Council Sponsored Articles.—Another means by which the Council presents current, authoritative information to the physician is that of sponsoring reports for publication in The Journal. These reports to the Council are written upon invitation from the Council and must present the subject in a manner to the satisfaction of each Council member before being submitted for publication. During the past year, the following such reports were published:

1. Nutritional State of the Mother Prior to Conception by G. Stearns, Ph.D., Nov. 22, 1958.
2. Maternal Nutrition and the Fetus by R. Hepner, M.D., Nov. 29, 1958.
3. Production of Congenital Malformations by Dietary Measures by J. Warkany, M.D., Dec. 13, 1958.
4. Effect of Reproductive Cycle on Nutritional Status and requirements by W. J. McGanity, M.D.; E. B. Bridgforth, A.B.; and W. J. Darby, M.D., Ph.D., Dec. 20, 1958.
5. Metabolic and Biochemical Changes in Pregnancy by I. G. Macy, Ph.D., Sc.D., Dec. 27, 1958.
6. Vitamin Preparations as Dietary Supplements and as Therapeutic Agents, Statement of the Council, Jan. 3, 1959.
7. Metabolism and Caloric Value of Alcohol by W. W. Westerfeld, Ph.D., and M. P. Schulman, Ph.D., May 9, 1959.

Lay Education.—The Council recognizes another responsibility in the area of nutrition education, and that is to the public. It believes, however, that the most effective means to be employed here is through the physician. The Council encourages its members and its staff to make every effort to serve as consultants or to participate in programs of nutrition education for the public.

Review of Educational Materials.—Trade associations, such as the American Meat Institute, American Institute of Baking, National Livestock and Meat Board, National Dairy Council, National Macaroni Institute and the Wheat Flour Institute have continued to ask for Council attention to their educational materials which are in a variety of forms: for example, booklets, radio and television scripts, exhibits, and advertising. These materials are reviewed by the entire membership of the Council for accuracy of the nutritional statements. When found to be satisfactory, the Council permits each item to carry the statement, "The nutritional statements presented have been reviewed by the Council on Foods and Nutrition of the American Medical Association and are considered to be in keeping with current authoritative medical opinion." Twenty-three pieces of educational materials were reviewed during the past year and all were granted permission to carry the statement after being revised in accordance with the Council's suggestions. Some of this material is presented by the trade associations to both physicians and the public.

Today's Health.—Three articles on nutrition appeared in *Today's Health*. They were:

What Should Oldsters Eat? by H. L. Gillum, July, 1958;
Diet for Mothers-to-Be by I. G. Macy, August, 1958;
How to Eat Well and Reduce Sensibly! by H. S. Mitchell, September, 1958.

These articles completed a series of 12 under the general title of "Food and Health," which was begun in October, 1957, and was co-sponsored by *Today's Health*, the Department of Health Education, and the Council.

Organization.—The Council met in Madison, Wisconsin, in October, 1958, and in Atlantic City in June, 1959. Dr. Charles S. Davidson and Dr. John B. Youmans were reelected Chairman and Vice-Chairman respectively.

The resignation of Dr. Conrad A. Elvehjem, president of the University of Wisconsin, was accepted regretfully. Dr. Elvehjem's 18 years of service to the medical profession as a member of the Council are gratefully appreciated.

Dr. Robert E. Olson, professor and head of the department of biochemistry and nutrition, Graduate School of Public Health, University of Pittsburgh, was welcomed to the membership of the Council. It is expected that Dr. Olson, through his intense activity in current research and his enthusiasm for disseminating practical nutrition information, will be a most valuable member of the Council.

The Council also welcomed Dr. Paul Day, scientific director of the Food and Drug Administration, as the FDA liaison representative to the Council. The value to the Council of such a representative was exemplified in the unstinting services rendered by the late Dr. E. M. Nelson, former director of the Division of Nutrition of the Food and Drug Administration. Dr. Nelson worked closely with the Council for 13 years before his death in 1958.

Dr. Goldsmith received the Osborne-Mendel award, one of the nation's top nutrition awards, given by the American Institute of Nutrition. She was honored specifically for her major contributions in the field of macrocytic anemias, the relationship of niacin to tryptophan, and protein malnutrition.

Staff Activities

The staff of the Council on Foods and Nutrition is directed by Dr. Philip L. White, Secretary. Other professional members are Eugene H. Stevenson, Assistant Secretary, Sandra L. Brodie, and Mary Jane Kibler.

Two responsibilities are recognized: (1) to implement directives received from the Council and from the Association, and (2) to instigate activities that will improve the Council's and the Association's service to the medical profession and to the public.

The business of the Council is regularly carried on by means of a Bulletin and two meetings each year. The Bulletin is issued periodically as needed, usually every two weeks. All of the educational materials submitted by trade associations for Council review, manuscripts of articles, and statements that the Council considers sponsoring for publication, and any other material that requires Council action is included in the Bulletin. All Council actions are recorded in the bulletin. The staff is, of course, responsible for this vehicle of communication.

The staff, in cooperation with the Chairman of the Council, is also responsible for the agenda and for physical arrangements for Council meetings.

During the past year, the Council sponsored two scientific symposiums in cooperation with two medical schools and their local medical societies. The staff works closely with the host Council member and a committee of his choosing in planning the program and the speakers. The staff is in charge of publicity, invitations, and other physical details of these meetings.

In October, 1958, the fifth symposium of the Council was held at the University of Wisconsin, cosponsored by the Medical School, Dane County Medical Society, and the Charitable, Educational, and Scientific Foundation of the State Medical Society of Wisconsin. "Factors Involved in Formation and Disease of Bone" was the title of the symposium.

"Nutritional Problems in Medicine" was the topic under consideration at the sixth symposium, which was held at Vanderbilt University in May, 1959. This meeting was cosponsored by Vanderbilt University Medical School and the Council.

Another means by which the Council presents current and authoritative information to the physician is that of sponsoring reports for publication in THE JOURNAL. Individual members, as well as the staff, suggest areas of need for such reports. When the Council has agreed on the subjects and possible authors, invitations are issued from the Council office. All arrangements, including communications with the authors, revisions to the satisfaction of both the author and the Council, and editing for content and for style acceptable to A.M.A. publications, are handled by the staff. Twelve articles and statements have been published.

In addition, five papers given at the symposium on "Nutrition in Pregnancy," which was held in October, 1957, were re-issued in monograph form.

Three articles on nutrition appeared in *Today's Health* under cosponsorship of *Today's Health*, Department of Health Education, and the Council.

These articles completed a series of 12 under the general title of "Food and Health" which began in October, 1957. In cooperation with the staffs of the cosponsoring departments, this series was handled in much the same manner as Council-sponsored scientific articles.

Several hundred thousand copies of Council-sponsored reprints have been distributed.

All Council activities are coordinated through the office of the Secretary. More detailed report of these activities is given in the report of the Council to the Board of Trustees.

Staff members are available at all times for cooperation with other offices of the Association.

The staff is especially pleased with the results of the campaign to combat nutrition nonsense and false claims. This campaign has been a cooperative effort of the Communications Division, the Department of Investigation, and the Council staff. During the past year, seven exhibits have been put into circulation. One 28-minute movie entitled "The Medicine Man" has been produced and shown on about 150 television stations plus other showings to organized audiences.

Two leaflets entitled "The Merchants of Menace" and "The Healthy Way to Weigh Less" were developed specifically for use with the exhibits on nutrition nonsense and on weight control. They are also promoted to the physician for distribution to his patients as supplements to his instructions. More than 250,000 copies of "The Merchants of Menace" and 600,000 copies of "The Healthy Way to Weigh Less" have been distributed during the past eight months.

At least 6,000 kits of materials designed to assist in planning local programs to combat food faddism have been distributed. It has received wide use by state and county medical societies, home economists, dietitians, and radio and television broadcasters. These kits contain materials to refute popular misleading claims and false ideas, an extensive bibliography, a sample speech, and instructions as to obtaining the movie, exhibits, and literature available from the Association.

Members of the staff cooperated with the editorial departments of the various A. M. A. publications. Manuscripts, "Letters to the Editor," etc., were reviewed. The staff was quite active as consultants for the question and answer columns in both THE JOURNAL and TODAY'S HEALTH.

The staff is frequently asked to serve as a consultant to the Advertising Committee.

Other Activities.—Dr. White was co-director of a Medical Nutrition Survey Team in Peru for three months. This survey was sponsored by the Interdepartmental Committee on Nutrition for National Defense and conducted at the request of the Peruvian government. More than 8,500 members of the Peruvian Armed Forces and civilian population were examined. A nucleus of an Armed Forces Research Institute was developed.

The Association is represented by staff members in a number of other organizations. Dr. White is a consultant to the Youth Power Congress of the National Food Conference, consultant to the Interdepartmental Committee on Nutrition for National Defense, member of the subcommittee on Food and Agriculture of the Interdepartmental Committee on Nutrition for National Defense, member of the Nomenclature Committee of the American Institute of Nutrition, member of the Food and Agriculture Research Advisory Committee of the U. S. Department of Agriculture, member of the Nutrition Committee of the American Heart Association, chairman of the Nutrition Committee of the Chicago Heart Association, and liaison representative of the Food and Nutrition Board of the National Research Council. Mr. Stevenson is also a liaison representative to the Food and Nutrition Board.

Members of the staff frequently participate in meetings of other professional groups and food trade associations. This participation is usually in the form of speeches or exhibits.

COUNCIL ON INDUSTRIAL HEALTH

Council Activities

Membership.—The make-up of the Council is the same as that given in last year's report except for the loss through death of one Council member, Dr. Paul S. Richards of Salt Lake City, and the addition in his place of Dr. Jan H. Tillisch of Rochester, Minn. Dr. Tillisch received his Doctor of Medicine degree from the University of Minnesota, and is at present a member of the Clinical Section of the Mayo Clinic. He has long had an interest in aviation medicine, and was Chairman of the A. M. A. Board of Trustees Committee on Aviation Medicine before aviation medicine was assigned to the Council and a Council Committee appointed (same members as Board of Trustees Committee). This is a Standing Committee of the Council, with Dr. Tillisch as its Chairman. Dr. Tillisch has been President of the Aero (now Aerospace) Medical Association; Consultant to the Surgeon General of the Air Force; Member of the Board of Visitors of the Air Force's Air University and Chairman of its Subcommittee on Medicine; Medical Director, Northwest Airlines; and Member of the American Board of Preventive Medicine.

Meetings and the Congress on Industrial Health.—Three meetings of the Council were held during this period, namely, in Portland, Ore., in September; in Cincinnati in February; and in Chicago in May.

The September meeting was held in Portland at the same time as the Pacific Northwest Industrial Health Conference and the Oregon State Medical Society Annual Meeting, in both of which several of the Council members actively participated. During the visit Council members also spoke before the Executive Club of Portland, the City Club of Portland, the Northwestern Association of Occupational Medicine, and a meeting of State Board of Health personnel and representatives of the voluntary health agencies.

The Cincinnati meeting was held in conjunction with the 19th Annual Congress on Industrial Health. Several excellent sessions were devoted to education and training in occupational medicine, industrial noise, research in ionizing radiation, occupational cancer, toxicology, and the presentation of cases of industrial disease by fellows and staff of the University of Cincinnati Institute of Industrial Health.

As in previous years, conferences with the chairmen of the state medical association committees on industrial health and with the officers and directors of the Industrial Medical Association were held in conjunction with the Congress. This meeting with the state chairmen has proved valuable both to the state medical associations and to the American Medical Association. It has helped to keep the Council apprised of problems requiring its attention. At the same time it has brought to the Council, for the solution of such problems, the collective thinking of the state chairmen, representing the views of physicians engaged in occupational health at the "grass roots." Solutions thus developed have been of inestimable value to the states concerned, often sparing them from having to learn the hard way. Additionally, the Council, acquainted as it is with A. M. A. policies, has been able to communicate and interpret them to the state chairmen for dissemination to their constituencies for their information and guidance. Conversely, the state chairmen and the industrial physicians they represent, being in touch with privately practicing physicians at the "grass roots" level, have been able to gather the latter's views, which have a vital bearing on industrial medicine, and to communicate these views to the Council, enabling it to make pronouncements that are realistic and helpful. The recent establishment by the Medical Association of Puerto Rico and by the Medical and Chirurgical Faculty of Maryland of committees on industrial health attests to the increasing recognition of the need for such committees and of the benefits they can yield the medical profession. All but a handful of the state medical associations now have *industrial health committees.*

General Council Activities.—During the American Public Health Association meeting in St. Louis in October and the Industrial Health Conference in Chicago in May, several of the Council members assisted the American Board of Preventive Medicine in the written and oral examinations of candidates for certification in Occupational Medicine.

Council members Kehoe and Sander represented the A. M. A. at the National Conference on Air Pollution held by the Public Health Service in Washington in November.

Dr. Sander took part as one of four delegates from the United States in an invitational Conference on Pneumoconioses in Johannesburg, South Africa, in February. The Conference was sponsored by the Pneumoconiosis Research Unit of the South African Council for Scientific and Industrial Research. Dr. Sander read two papers: "Radiological Appearances of the More Common Pneumoconioses and of Other Conditions Which Simulate Them," and "The Effect of Continuing in Original Dusty Occupation on the Progression of Pneumoconiosis." Dr. Sander is an associate clinical professor of occupational and environmental medicine, Marquette University School of Medicine.

Drs. Shepard, Kehoe, Sterner, and Newquist, members of the Council, took an active part in the National Health Council's National Health Forum held in Chicago in March. In addition to appearing on the program, Dr. Sterner was General Chairman of the Forum, which this year was on the subject "The Health of People Who Work."

The Council Chairman, with the Secretary and with corresponding representation from other councils and departments of the Division of Socio-Economic Activities and the Division Director and A. M. A. Assistant Executive Vice-president, appeared in May before the Committee on Socio-Economic Activities of the Board of Trustees. The Council Chairman made a verbal report to the Committee, offering recommendations as to the proper scope of activity the Council should have, basing his report upon a report (copies of which he furnished to the Committee) that had been developed by an *ad hoc* Committee on Council Scope chaired by Council member Sterner.

Committee Activities

Committee on Aviation Medicine (Standing Committee)

Dr. Jan H. Tillisch, Chairman, Rochester, Minn.
Dr. Wm. F. Ashe, Columbus, Ohio
Brig. Gen. Victor A. Byrnes, USAF MC, Washington, D. C.
Capt. Oran W. Chenault, USN MC, Washington, D. C.
Dr. Herbert F. Fenwick, Chicago
Capt. Ashton Graybiel, USN MC, Pensacola, Fla.
Dr. G. J. Kidera, Chicago
Dr. Ludwig G. Lederer, Washington, D. C.
Dr. W. Randolph Lovelace II, Albuquerque
Dr. L. O. Simenstad, Osceola, Wis.
Brig. Gen. M. S. White, Washington, D. C.
Dr. B. Dixon Holland, Secretary, Chicago

This Committee met on July 31 and Aug. 1 in Washington, D. C., to study and to formulate comments and recommendations on Medical Study Reports Nos. 1 and 2 of the Flight Safety Foundation to the Civil Aeronautics Administration, entitled, respectively, "Physical Qualifications of Air Traffic Control Personnel" and "Medical Aspects of Civil Aviation"; and to consider the organization of the medical division of the Civil Aeronautics Administration and legislation proposed to upgrade and strengthen this division. The Committee discussed these matters with representatives of the CAA and with Mr. Luikart, Assistant to Mr. Quesada, the then Special Assistant to the President for Airways Modernization and the present Administrator of the newly established Federal Aviation Agency, successor organization to the CAA. The Committee prepared and forwarded to the Administrator of the CAA comments and recommendations on the above-mentioned Flight Safety Foundation Medical *Study Reports.*

The Committee met again in November in San Antonio with Mr. Luikart and with Dr. Smith, former chief of the CAA medical division, and then Acting Civil Air Surgeon of FAA, principally to discuss and make recommendation on the medical setup of the FAA in an attempt to get it so staffed and so placed in the organization chart as to make it maximally effective in developing and applying standards of physical and mental fitness for flying. The Committee also discussed with Dr. Smith ways of getting the fullest possible cooperation between the medical profession and the FAA Civil Air Surgeon's office and central and regional medical departments for the promotion of flying safety. Considerable credit is probably due the Committee for the elevation of the Civil Air Surgeon with his medical department to a position directly under the FAA Administrator, and not under an intermediate office as was the medical chief of the CAA.

The Committee held its third meeting during the report year in April in Los Angeles. It discussed the FAA Administrator's failure to date to fill the position of Civil Air Surgeon; the proposed FAA rule changes to make stricter the standards of physical and mental fitness for flying and to designate physicians for the examination of applicants for Class III Airman (private and student pilots) certificates; the development of a guide to govern the transportation by air of nonmilitary patients suffering various illnesses; the desirability of having space medicine assigned to the Committee; and the development of The Journal editorials to impress physicians with the gravity of the responsibility they incur in pronouncing an individual physically and mentally fit to serve as an aircraft crew member or air traffic controller.

Committee on Interprofessional Relations

(Standing Committee)
Dr. Lemuel C. McGee, Chairman, Wilmington, Del.
Dr. E. S. Jones, Hammond, Indiana
Dr. Charles F. Shook, Toledo

This Committee has been concerned with the importance of presenting industrial medicine, its problems and demands, to the general practitioner. It is he upon whom most small industries must depend almost solely for whatever health guidance is provided their employees. The Committee has convinced the American Academy of General Practice that this is an important area and is assisting that Academy to prepare a meaningful program for its next annual meeting.

The Committee is also concerned with the schism between the American Industrial Hygiene Association and the industrial physicians in general. It has encouraged the AIHA to prepare a statement of Scope, Functions, and Objectives of Industrial Hygiene and to join with the

Council on Industrial Health in various statements which will indicate the most productive relationships between industrial physicians and industrial hygienists.

This Committee directed and coordinated the following Committees.

Committee on Industrial Nursing

Dr. Jermyn F. McCahan, Chairman, Chicago
Mary Louise Brown, R.N., New Haven, Conn.
Dr. David H. Goldstein, New York City
Dr. Emmett B. Lamb, Indianapolis
Katharine A. Lembright, R.N., New York City
Dr. O. Tod Mallery, Jr., Wausau, Wis.
Dr. Charles F. Shook, Toledo
Sara P. Wagner, R.N., New York City

The Committee met in New York in September, 1958, and in Chicago in March, 1959.

The report, "The Legal Scope of Industrial Nursing Practice," which was prepared in cooperation with the Law Division was published in The Journal (pages 1072-1075, March 7, 1959). The paper has been reprinted in at least two journals with wide circulation.

The Committee approved statements from the American Nurses' Association and the American Association of Industrial Nurses concerning the role of the licensed practical nurse in industry.

The Committee is working on the following statements: "Guiding Principles and Procedures for Nursing Care of Industrial Eye Injuries and Diseases," "Education in Occupational Health Nursing," and "The Occupational Health Nurse-Relationship to Management and Medical Supervision."

Joint Committee on Mental Health in Industry

*†Dr. Ralph T. Collins, Chairman, Rochester, N. Y.
†Dr. Leo H. Bartemeier, Baltimore
†Dr. Leonard E. Himler, Ann Arbor
*Dr. W. Donald Ross, Cincinnati
*Dr. Charles F. Shook, Toledo
(*Council on Industrial Health designee;
†Council on Mental Health designee)

This Joint Committee of the Councils on Industrial Health and Mental Health last year met in November in Chicago and in April in Philadelphia to restate and consider the objectives for which it was established and to draw up for their attainment a program of Committee activities. These objectives are (1) to bring to bear effective medical, joint psychiatric and occupational medical, leadership in the solution in industry of such mental health problems as alcoholism, inter-personal frictions, and (2) proper placement and utilization for maximum productivity of individuals who are emotionally or mentally disturbed. Among activities decided upon was the establishment and maintenance of liaison with management and labor groups, state and county medical societies, and other medical as well as nursing organizations in order to learn of their activities in industrial mental health and to determine how best to work with and through them.

Committee on Medical Education and Training

(Standing Committee)

Dr. Robert A. Kehoe, Chairman, Cincinnati
Dr. V. C. Baird, Houston
Dr. Lemuel C. McGee, Wilmington

This Committee has continued with activities designated by its name. It has cooperated with the American Board of Preventive Medicine in the preparation and conduct of written and oral examinations for physicians seeking certification in occupational medicine. It has also been of great assistance in preparing criteria for the accreditation of schools offering postgraduate study in occupational medicine. In addition, it has assisted in the development of criteria for the accreditation of in-plant residencies in occupational medicine.

Committee on Public Services

(Standing Committee)

Dr. Melvin N. Newquist, Chairman, West Cornwall, Conn.
Dr. John N. Gallivan, East Hartford, Conn.
Dr. Jan H. Tillisch, Rochester, Minn.

This Committee directed and coordinated the following Committees:

Committee on Industrial Health Emergencies

Dr. Norvin C. Kiefer, Chairman, New York City
Dr. Cortez F. Enloe, Jr., New York City
Dr. Allan J. Fleming, Wilmington, Del.
Dr. John N. Gallivan, East Hartford, Conn.
Dr. James H. Lade, Albany, N. Y.
Dr. Eugene Walsh, Chicago

Meeting in New York City last September, this Committee started a survey of 65 large industrial companies concerning their experiences with industrial immunization and work absence during the Asian influenza outbreak during the fall of 1957. The data obtained were used as background information for a "Guide to Industrial Immunization Programs." This "Guide" is now being revised, in accordance with suggestions made by the Board of Trustees. Plans for the second major project of the Committee the development of a "Guide to Planning Industrial Disaster Medical Service," were laid out at the Committee's January meeting, also held in New York City. A large number of industrial disaster plans have been studied, and a draft of this "planning guide" has already been prepared. In another project, the Committee is continuing its study of the value and use in industry of mouth-to-mouth resuscitation.

Committee on Workmen's Compensation

Dr. Gerald D. Dorman, Chairman, New York City
Dr. Joseph P. Cain, Jr., Mullins, So. Car.
Dr. Rutherford T. Johnstone, Los Angeles
Dr. Quentin W. Mack, Boise, Idaho
Dr. Jermyn F. McCahan, Chicago
Dr. O. A. Sander, Milwaukee
Dr. Carlton E. Wertz, Buffalo, N. Y.

The Committee met in Chicago in November, 1958.

No reports were published during the year, but the Committee continued work on a revision of the A. M. A. statement on "Medical Relations in Workmen's Compensation."

The Committee established liaison with the International Association of Industrial Accident Boards and Commissions and expects to contribute to the IAIABC annual meetings.

Reports on the following are in various stages of development:

Workmen's compensation aspects of hearing loss.
Workmen's compensation aspects of ionizing radiation.
Medical fees under workmen's compensation.
Medical testimony in compensation cases.

Joint Committee on Medical Care for Industrial Workers

†Dr. Frank J. Holroyd, Chairman, Princeton, W. Va.
†Dr. Thomas J. Danaher, Torrington, Conn.
†Dr. Edwin P. Jordan, Charlottesville, Va.
*Dr. Melvin N. Newquist, West Cornwall, Conn.
*Dr. Leo Price, New York City
*Dr. Wm. A. Sawyer, Rochester, N. Y.
*Dr. Frederick W. Slobe, Olympia Fields, Ill.
† Dr. Clyde C. Sparks, Ashland, Ky.
(*Council on Industrial Health designee;
† Council on Medical Service designee)

This is a Joint Committee of the Council on Medical Service and the Council on Industrial Health.

Its report is included in the report of the Council on Medical Service.

Committee on Scientific Development (Standing Committee)

Dr. James H. Sterner, Chairman, Rochester, N. Y.
Dr. Rutherford T. Johnstone, Los Angeles
Dr. O. A. Sander, Milwaukee

This Committee directed and coordinated the following Committees:

Committee on Neurological Disorders in Industry

Dr. Melvin D. Yahr, Chairman, New York City
Dr. Pearce Bailey, Bethesda, Md.
Dr. Benjamin Boshes, Chicago
Dr. Francis M. Forster, Madison, Wis.
Dr. Robert S. Garber, Belle Mead, N. J.
Dr. Augustus Rose, Los Angeles
Harry Sands, Ph.D., New York City
Dr. Edward D. Schwade, Milwaukee
Dr. Harry E. Tebrock, New York City

A "workshop-type" meeting was held in February with several industrial physicians in Cincinnati at the time of the A. M. A. Congress on Industrial Health. In addition to providing a large amount of information, the meeting gave to the Committee and to the attending industrial physicians a better understanding of the problems of neurological disorders in industry. As a result of the information obtained from this and other Committee investigations, the Committee at its June meeting in Atlantic City prepared a draft of a "Guide to the Classification and Employment of Individuals with Neurological Disorders." In addition to containing a classification of functional capacity, the "Guide" will outline other factors which must be considered by the plant physician, the general physician, the neurologist, and the plant supervisory personnel when dealing with the employment problems of an individual with a neurological disorder.

Committee on Industrial Medical Records

Dr. Earl A. Irvin, Chairman, Dearborn, Mich.
W. M. Gafafer, D.Sc., Washington, D. C.
Annette Hartsock, R.N., Detroit
F. M. Hemphill, Ph.D., Ann Arbor
Dr. J. A. Llewellyn, Butler, Pa.
Patricia O'Brien, R.N., Dearborn, Mich.
Dr. Logan T. Robertson, Asheville, N. C.

At its first meeting, held in Dearborn, Mich., last November, the Committee developed a set of objectives of industrial medical records, which is designed to guide the Committee in developing a kit of standardized, minimal, basic, industrial medical record forms. After studying a large number of industrial medical forms, the Committee developed at its May meeting in Asheville, N. C., a draft of a combined "Health History and Examination" form. Other record forms will be worked on in order.

Committee on Occupational Cancer

Dr. G. Burroughs Mider, Chairman, Besthesda, Md.
Harold F. Dorn, Ph.D., Bethesda, Md.
Dr. John G. Downing, Boston
Dr. Robert E. Eckardt, Linden, N. J.
Edward A. Lew, New York City
W. H. Maguigan, Ph.D., Hopewell, Va.
Dr. John J. Phair, Cincinnati

The Committee met on May 14 at the National Institutes of Health in Bethesda, Maryland to review its past work, including the preparation of its report "Occupational Cancer—Methods of Epidemiological Study" (The Journal, April 26, 1958) and to make plans to continue and intensify its efforts to improve epidemiologic studies for detecting and controlling substances that are or may be carcinogenic which are produced, used and handled in industry.

Committee on Industrial Ophthalmology

Dr. Edmund B. Spaeth, Chairman, Philadelphia
Dr. Franklin M. Foote, New York City
Dr. Ralph S. McLaughlin, Laconia, N. H.
Dr. Joseph F. Novak, Pittsburgh
Dr. Ralph W. Ryan, Morgantown, W. Va.
Dr. Benjamin J. Wolpaw, Cleveland

The Committee met twice, in October, 1958, in Chicago and in June, 1959, in Philadelphia.

Four reports were written and published during the year:
"Tonometry in Glaucoma Surveys," The Journal, Jan. 31, 1959, page 506.
"Use of Water in Emergency Treatment of Chemical Eye Injuries," The Journal, Sept. 6, 1958, page 47.
"Effect of Fluorescent Light on Vision," The Journal, Sept. 6, 1958, page 47.
"Eye Safety Equipment," The Journal, Sept. 6, 1958, page 47. The four publications were reprinted and distributed on request.

The Committee reviewed the acuity charts for distant and near vision developed by the Wilmer Ophthalmological Institute of Johns Hopkins University and recommended that they be referred to the appropriate department within the A. M. A. for evaluation.

Statements are being prepared on: the use of tinted lenses in night driving, and placement in industry of individuals with high myopia and chorioretinal degeneration.

Committee on Occupational Dermatoses

Dr. Donald J. Birmingham, Chairman, Cincinnati
Dr. Frank C. Combes, New York City
Dr. A. Fletcher Hall, Santa Monica, Calif.
Dr. James W. Jordan, Buffalo
Dr. George Morris, Boston
Dr. Ray O. Noojin, Birmingham, Ala.
Dr. Leonard Weber, Chicago

The Committee met in Chicago in December, 1958.

Five reports were prepared and published:
"Occupational Dermatoses—An Introduction," The Journal, July 26, 1958, pages 1636-1637.
"Occupational Dermatoses—Predisposing and Direct Causes," The Journal, Aug. 30, 1958, pages 2203-2205.
"Prevention and Control of Occupational Dermatoses," The Journal, March 21, 1959, pages 1340-1344.
"Prolonged and Recurrent Industrial Dermatitis," The Journal, Oct. 4, 1958, pages 516-520.
"Some Medicolegal Aspects of Occupational Dermatoses," The Journal, Nov. 8, 1958, pages 1351-1359.

The reports were reprinted together in one booklet and added to the Council's publications for distribution.

Committee on Medical Services for Construction Projects

Dr. Irving R. Tabershaw, Chairman, New York City
Dr. Joseph A. Quigley, Hamilton, Ohio

This Committee completed its assigned task with the publication in the Dec. 6, 1958, issue of The Journal of "A Guide for Medical Services for Construction Projects," and has been officially discharged. Reprints of this article are now available.

Committee on the Pneumoconioses

Dr. Edgar Mayer, Chairman, New York City
Dr. Nolan L. Kaltreider, Rochester, N. Y.
Dr. Norman Plummer, New York City
Dr. Frank J. Princi, Cincinnati
Dr. O. A. Sander, Milwaukee
Dr. Arthur J. Vorwald, Detroit
Dr. George W. Wright, Cleveland

This Committee (originally "Committee on Classification of the Pneumoconioses") was authorized by the Board of Trustees in June, 1958, on recommendation by the Council on Industrial Health. It held its first meeting in Philadelphia in June, 1959, and set for itself the task of developing material on the pneumoconioses, particularly for the general practitioner, including classification, causes, clinical and laboratory findings; and guides to correct history taking, examination, disability evaluation, determination of causal relationship to occupation, and medical management.

Joint Activities with Other A. M. A. Groups.—The Council on Industrial Health continued its cooperative efforts with other groups within the A. M. A. In addition to the aforementioned joint activities with the Council on Mental Health through the Committee on Mental Health in Industry, the Council on Industrial Health worked closely with the Councils on Drugs, Medical Physics and Medical Service, and the Committee on Toxicology. In fact, the Council on Industrial Health worked at one time or other with almost every one of the A. M. A. councils, departments and committees.

Liaison with Other Societies, Associations, and Groups

The Council continues to cooperate with the following groups:

American Academy of General Practice
American Academy of Ophthalmology and Otolaryngology
American Association of Governmental Industrial Hygienists
American Association of Industrial Nurses
American Board of Preventive Medicine
American Foundrymen's Society (Committee on Noise in Industry)
American Heart Association
American Industrial Hygiene Association
American Management Association
American Nurses Association (Industrial Nurses Section)
American Public Health Association (Subcommittee on Air Pollution)
American Society of Mechanical Engineers (Committee on Uniform Air Pollution)
American Standards Association (Committee on Uniform Industrial Hygiene Standards and Sectional Committee N6 Reactor Hazards)
American Union of Occupational Medicine (inter-American)
Association of State and Territorial Health Officers
Committee of United States Planning XIII International Congress of Occupational Health to be held in New York City, 1960
Industrial Medical Association and Occupational Health Institute
International Association of Industrial Accident Boards and Commissions
National Association of Manufacturers
National Health Council
National Safety Council's Traffic and Transportation Division, Industrial Division, Committee on Nuclear Energy in Industry, Industrial Nursing Section and Committee on Safety Films
President's Committee on Employment of the Physically Handicapped and its Medical Committee
President's Committee for Traffic Safety
President's Conference on Occupational Safety
World Medical Association
U. S. Government agencies, including the Public Health Service, the Office of Civil and Defense Mobilization, and the occupational health offices of the armed forces' surgeons general.

Miscellaneous.—Members of the Council and members of the Council's various committees were extremely helpful in providing information on many of the inquiries received by the staff on many subjects, such as occupational health programs, industrial nursing, industrial hygiene, job health hazards, job and highway safety, physical examination programs, aviation medicine and preventive medicine in general.

Staff Activities

Personnel.—The make-up of the staff is the same as that given in last year's report.

Activities.—Staff services were provided in connection with the plans and decisions reported in the Council report submitted by the Council Chairman to the Executive Vice-president for transmittal to the Board of Trustees.

The Council Secretary participated in a panel on "Where Is the Manpower Coming from?" at the National Health Council's National Health Forum held in Chicago in March, and took part in the final morning's breakfast sessions, at which suggestions for future action by the National Health Council were formulated.

In May the Secretary of the Committee on Industrial Health Emergencies attended at Battle Creek, Mich., an Office of Civil and Defense Mobilization course in "Industry Defense and Mobilization" as background for his work as Committee Secretary, particularly in the development of the "planning guide" proposed by the Committee.

In February in Chapel Hill, N. C. the Council Secretary attended the Third Annual Governor's Conference on Occupational Health; and the annual Seminar on Occupational Health, sponsored jointly by the School of Medicine of the University of North Carolina, the Committee on Occupational Health of the Medical Society of the State of North Carolina, and the Liberty Mutual Insurance Company. At this latter meeting he gave a talk on the "Scope and Interprofessional Relations of Occupational Medicine," which was accepted by THE JOURNAL for publication in its July 25, 1959, issue.

Staff met with Mr. Clinton Fair and Mr. Jerome Pollack, AFL-CIO, in Washington in April to develop a program of cooperative action between the two organizations in the field of workmen's compensation. Various projects and activities were considered and several agreed upon as worthy of exploration, study, and joint action. The first joint action will be to encourage the creation of medical advisory committees to workmen's compensation bodies in the various states. This was acknowledged to be the first step in securing necessary revision of laws. Future meetings have been planned to continue discussions and planning. The next meeting is tentatively scheduled for Boston in September during the meeting of the International Association of Industrial Accident Boards and Commissions, at which time the A. M. A. *Workmen's Compensation Committee* will also meet. This activity is in consonance with and implementation of the Council's published statements on workmen's compensation, approved by the House of Delegates in 1955.

The Secretary attended meetings of the President's Committee on the Employment of the Physically Handicapped and its Medical Committee. He told the Medical Committee about the work of the A. M. A. Committee on Rehabilitation in promoting greater interest and activity in rehabilitation on the part of physicians in general and recommended that it consider asking the committees on industrial health of the state medical associations to serve as the Medical Committees of the Governors' Committees on Employment of the Physically Handicapped.

The Council staff drafted a "Guide to Organization and Functioning of a Committee on Industrial Health of a State Medical Association," which, when completed with Council and other assistance, will be used to furnish state medical societies the advice they request in organizing and using such committees. It is expected also to be of great help to the chairmen of such committees.

During the past year thousands of copies of reprints pertaining to occupational health were supplied to industrial physicians, general practitioners, nurses, and other interested parties. In response to numerous requests from medical and nursing schools Council publications have been furnished in quantities for use in occupational medicine and nursing instruction. Hundreds of inquiries were answered, some requiring a great deal of literature research. These inquiries concerned a large number of subjects, such as occupational health programs, industrial nursing, industrial hygiene, job health hazards, job and highway safety, physical examination programs, aviation medicine, and preventive medicine in general.

A great deal of staff time was spent in connection with committee activities. Several Council Bulletins were published for the information of Council members.

COUNCIL ON LEGISLATIVE ACTIVITIES

This report covers the period from September 1, 1958, to September 15, 1959. The period of the report has been extended beyond July 1 in order to cover the complete activities of the First Session of the 86th Congress, which recessed on September 15, 1959.

At the December, 1958, meeting of the Board of Trustees and the House of Delegates, the former Committee on Legislation was elevated to Council status and redesignated as the Council on Legislative Activities. At the same time Doctor Martyn A. Vickers of Bangor, Maine, was appointed to succeed Doctor D. Olan Meeker of Riverside, Connecticut, who died on September 13, 1958. Doctor David B. Allman of Atlantic City, New Jersey, and Doctor Raymond L. White of Boise, Idaho, were added to the Council, and C. Joseph Stetler, Director of the AMA Law Division, was designated as Secretary of the Council. The composition of the Council at present is:

George M. Fister, M.D., *Chairman*
McKinnie L. Phelps, M.D., *Vice Chairman*
David B. Allman, M.D.
C. Byron Blaisdell, M.D.
R. B. Chrisman Jr., M.D.
Frank C. Coleman, M.D.
Harlan English, M.D.
Frank J. Holroyd, M.D.
J. Lafe Ludwig, M.D.
John E. McDonald, M.D.
George E. Twente, M.D.
Martyn A. Vickers, M.D.
Raymond L. White, M.D.
C. Joseph Stetler, *Secretary*

During the period covered by this report, the Council met on five occasions: on September 28, 1958, in Chicago, Illinois; on November 30, 1958, in Minneapolis, Minnesota; on February 28, 1959, in Washington, D. C.; on May 8, 1959, in Washington, D. C.; and on August 2, 1959, in Chicago. The Subcommittee on Political Avtivities also met in Chicago on August 1, 1959. The next meeting of the Council will be held in St. Louis, Missouri, on October 1 to be followed by a two-day Medical Legislative Conference to which representatives from all of the states have been invited.

First Session, 86th Congress

During the first session of the 86th Congress which began on January 7, 1959, and ended September 15, 1959, a total of 13,892 bills were introduced. More than one thousand were subject to serious study and 495 were analyzed for consideration by the Council on Legislative Activities. Of these bills 77 have been subject to some form of legislative activity. Six have been signed into law by the President. In addition three bills were awaiting Presidential signature when this report was prepared. There have been 28 reports by committees on bills being followed by the Association. The bills signed by the President involved Extension of the Selective Service Act, Presumption of Service-Connection for Veterans with Leprosy, Presumption of Service-Connection for Veterans with Multiple Sclerosis, Admission Requirements for Immigrant Aliens with Tuberculosis, Public Health Traineeships, and Federal Employees Health Insurance.

The bills awaiting Presidential signature are Nursing Home Loan Guarantees, Extension of the Air Pollution Control Law, and Atomic Energy Act Amendment Regarding Cooperation between the States.

During the period of the report more than 26,000 pages of the Congressional Record were studied and indexed and over 7,000 pages of the Federal Register were scanned for items of interest.

Testimony and Written Statements Presented

During the First Session of the 86th Congress the American Medical Association testified or submitted written statements on nineteen occasions, as shown below:

Bill No.	*Subject*	*Date*	*Presentation*
S. 57	proprietary nursing Mortgage Insurance for homes	1/26/59	Statement
H.R. 2357	Mortgage Insurance for proprietary nursing homes	1/29/59	Statement
H.R. 2260	Universal Military Training and Service Act	2/2/59	Statement
S.J.Res. 41	International Health and Medical Research Act of 1959	2/25/59	Testimony
H.R. 3089	Immigration of Aliens with Tuberculosis, health controls	3/20/59	Statement
S. 94	Health Insurance for Federal Employees	4/27/59	Statement
H.R. 5944	Community Facilities Act	4/29/59	Statement
Immigration and Naturalization Laws		5/26/59	Statement
Social Security		6/3/59	Statement
H.R. 10	Tax Deferment of Annuities for the Self-Employed	6/18/59	Testimony
H.R. 6769	Appropriations for Departments of Labor and HEW, etc.	6/19/59	Statement
H.R. 2347 S. 441	Air Pollution Control Act	6/26/59	Statement
Automobile Safety		7/6/59	Statement
H.R. 4700	Forand Bill	7/15/59	Testimony
S. 2162	Health Insurance for Federal Employees	7/21/59	Statement
S. 57 S. 2378	Mortgage Insurance for proprietary nursing homes	7/22/59	Statement
Problems of the Aged and Aging		8/5/59	Testimony
S. 1283	Hazardous Substances	8/13/59	Statement
S. 2575	Retired Federal Employees Health Insurance	9/2/59	Statement

In view of the oft-repeated and highly inaccurate accusation that the AMA is completely negative in its legislative policies, it is interesting to note that in fourteen of the above instances the Association supported the legislation in question, on four occasions the statement was informational only and only once—in connection with H.R. 4700—did we actively oppose the legislation.

Although all of the bills on which testimony or statements were presented are important, the measures of most current interest and significance to the medical profession are H.R. 4700, the "Forand Bill" and H.R. 10, the Keogh-Simpson legislation.

H.R. 4700—The "Forand Bill"

Undoubtedly the most important legislation with which the Council dealt during the period covered by this report was the Forand Bill, H.R. 4700. This measure proposed an amendment to Title II of the Social Security Act so as to provide hospital, surgical, dental and nursing home benefits for the more than twelve million beneficiaries of the Old Age, Survivors and Disability Insurance program. It was strenuously opposed at all levels of organized medicine and by the majority of other groups in the health field. At the adjournment of the *First Session of the 86th Congress* no final action had been taken on the bill.

Due to the seriousness of the "Forand-type" legislation and its clear-cut threat to the medical profession, the Association established a full time staff task force to work on this campaign. This group has worked closely with the Council throughout the entire year. The plans and strategy of this special staff operation were placed before the Council in detail on several occasions and received the endorsement of the Council on each occasion.

The members of the Council and the state legislative keymen devoted a great deal of time during the period of this report to the Forand campaign. They worked closely with the staff of the newly organized Field Service Division in an effort to effectively contact the twenty-five members of the House Ways and Means Committee and to persuade them and other influential Congressional leaders that this legislation was not in the public interest.

Testimony was given on H.R. 4700 by the Association during the five days of hearings conducted by the House Ways and Means Committee from July 13-17, 1959. Appearing for the Association were Doctor Leonard W. Larson, Chairman of the Board of Trustees, and Doctor Frederick C. Swartz of Lansing, Michigan.

Although this bill was contained in Committee during the First Session of the 86th Congress there can be little doubt that legislation of this type will be the most important measure facing the medical profession and the Council next year. The Council feels that this legislation is a clear-cut and direct threat to the private practice of medicine and is committed with all of the other agencies of the AMA to insure its defeat.

H.R. 10—Keogh-Simpson Legislation

The Keogh-Simpson bills, H.R. 9 and H.R. 10, under the same bill numbers, but with different authors, have been of interest to the American Medical Association and the Council since 1951.

H.R. 10 is intended to provide self-employed persons with an income tax deduction for limited amounts which they set aside for retirement purposes. To qualify as tax deductions these "retirement deposits" must be used:

a) To purchase a "restricted retirement policy" (an annuity or endowment contract underwritten by an insurance company); or

b) Deposited into a "restricted retirement fund" (a tax exempt trust fund administered by a bank).

Amounts set aside in this way and the earnings accumulated therefrom will be free from income taxes until they are withdrawn or paid out in benefits. The taxpayer must start drawing on these funds before he reaches the age of 70½.

The maximum amounts which a self-employed taxpayer could claim annually as a deduction for retirement deposits under the bills, would be limited by these rules:

1) Except as provided in subparagraph (2) below, the taxpayer could deduct up to 10% of his net earnings from self-employment each year, not exceeding $2,500.

2) For the taxpayer who attained age 50 before January 1, 1959, the annual limit would be increased by 1/10 for each full year of his age in excess of 50. Thus, for an individual age 60 on that date, the limit on his annual deduction would be 20% of self-employment income up to a maximum of $5,000.

3) The lifetime total amount which may be set aside tax free (exclusive of the amount which such deposits earn) is 20 times the maximum annual deduction allowable, but no more than a total of $50,000.

A special limitation is imposed on taxpayers who have previously received benefits under an employer's pension, profit-sharing or stock bonus plan.

A "self-employed individual" is defined as one who is subject to the tax on self-employment income under the Social Security Act and doctors and clergymen. The fact that a self-employed person receives some wages, subject to social security taxes, would not necessarily exclude him from eligibility for the deduction. If the taxpayer dies before he reaches age 70, his retirement deposits and accumulated earnings must be distributed within 5 years after death. Payment may be made in a lump sum or used to purchase an annuity for the taxpayer's widow.

The bill restricts the taxpayer from assigning his interest in the fund or pledging it as security for a loan. However, he can name beneficiaries who may inherit his interest if he should die. The bills provide that retirement funds may be invested only in government bonds, mutual fund shares and listed corporate stocks and bonds, and that the taxpayer will be taxed only when he receives payments from the retirement fund or insurance contract.

This bill was favorably reported by the House Ways and Means Committee on February 24, 1959. On March 16, under a suspension of the rules, the bill was considered and passed by the House. The Senate Finance Committee held hearings on H.R. 10 on June 17 and 18 and on August 11. At the June hearings, Doctor George M. Fister, a member of the Board of Trustees and the Chairman of the Council on Legislative Activities, and Doctor Vincent W. Archer, state legislative keyman for Virginia, testified.

Since the first session of the 86th Congress has adjourned it is hoped that action will be taken when Congress reconvenes. Prospects for the passage of H.R. 10 are brighter than they have been since this bill was first introduced eight years ago.

Legislative Activities of the Woman's Auxiliary to the American Medical Association

The program of close cooperation with the Woman's Auxiliary on legislative matters was continued during the period of ths report. The Chairman of Legislative Committee of the Auxiliary continued to attend the meetings of the Committee under a policy instituted in February, 1957. The Woman's Auxiliary has completed its own keywoman organization and all requests for legislative action sent to the state legislative keymen were also relayed to the Woman's Auxiliary through their Legislative Committee.

Conclusion

In closing its report, the Council wishes to express the appreciation to the Board of Trustees, the Woman's Auxiliary, the officers and staff of the Association, and the Washington Office, as well as to the state medical societies, for their cooperation and assistance during the period covered by this report. We particularly wish to asknowledge the significant contribution of the State Legislative Keymen and the physicians in the various states who took part in Federal legislative matters during this period.

COUNCIL ON MEDICAL PHYSICS

Council Activities

The Council on Medical Physics was organized in 1956. This is the third Annual Report and covers the activities and decisions of the Council during the period July 1, 1958, through June 30, 1959.

The Council submitted a list of nominees to the Board of Trustees for consideration for appointment to Council membership. Dr. Irving R. Adams was appointed to serve as a member of the Council to succeed Dr. Irving S. Wright who resigned. One Council member, Dr. Frederic C. Bost, died during the year.

At the request of the Council, William F. Hughes, M.D., submitted a report "Beta Radiation Sources, Uses, and Dangers in Treatment of the Eye." After receiving consultants' opinions on the paper, the Council authorized its publication.

The Council adopted a preliminary draft of a report entitled "Evaluation of Electrical Nerve-Muscle Stimulation in Providing Pulmonary Ventilation." Revisions as suggested by consultants will be incorporated in a final draft which will be considered by the Council for authorization for publication in THE JOURNAL.

Council evaluation projects authorized or under consideration for authorization include the following: evaluation of negative airborne ion therapy; cardiac resuscitation apparatus; room air-filtering apparatus; and oxygen therapy apparatus.

According to arrangements made two years ago, the animated portion of the Council exhibit on artificial respiration was transferred to the Chicago Museum of Science and Industry where it became a part of the Museum's permanent exhibit on the history of artificial respiration.

The Council provided the Board of Trustees with a list of names to be used as a basis for making appointments to the Board's *ad hoc* Committee on Atomic Medicine and Ionizing Radiation. This contained the names of approximately 65 individuals.

The Council-sponsored "Symposium on Mouth-to-Mouth Resuscitation (Expired Air Inflation)," THE JOURNAL, May 17, 1958, has been a significant contribution toward the dissemination of scientific information regarding methods of artificial respiration. It is anticipated that, on the basis of this and other subsequent information, it will be possible to prepare an evaluation report on various methods of artificial respiration intended primarily for use by the general public.

Staff Activities

At the beginning of the 12-month period covered by this report the permanent staff consisted of the Secretary of the Council, the Associate Secretary, and three office secretaries. During the year the Associate Secretary retired from this position to become a consultant to the Department and an assistant to the Director of the Division of Scientific Activities. Also a full-time staff assistant was added, and the services of a research assistant were available for several months.

The staff as part of its general activities provided consultation services and worked with all of the departments of the Association.

In serving the Council on Medical Physics the staff collected and processed data from many sources on various items being evaluated by the Council. Detailed biographical information was obtained on the 65 individuals whose names were submitted by the Council to the Board of Trustees to serve as a basis for appointments to the *ad hoc* Committee on Atomic Medicine and Ionizing Radiation.

Reprints of various Council-sponsored articles were distributed to interested persons or groups on request. These included 5,500 copies of the Symposium on Mouth-to-Mouth Resuscitation (Expired Air Inflation), 200 miscellaneous reprints, and 53,450 pocket-size instruction cards on artificial respiration.

During the year the staff did preliminary planning and survey work for the *ad hoc* Committee on Atomic Medicine and Ionizing Radiation. The necessary arrangements were made for conducting the meeting and providing the Committee with staff services.

Members of the staff participated in the following activities: a meeting of the Executive Committee of the Joint Conference on Electrical Techniques in Medicine and Biology; a meeting of the Committee on Hospital Operating Rooms of the National Fire Protection Association; a demonstration of various types of artificial respiration at the Chicago Health Fair given at the Chicago Museum of Science and Industry; the delivery by the Secretary of a paper at the National Safety Congress and Exposition, sponsored by the Industrial Medical Association, the American Society of Safety Engineers, and the National Safety Council, on oxygen and its uses in resuscitation; a meeting of the National Academy of Sciences–National Research Council *ad hoc* Advisory Committee on Artificial Respiration.

COUNCIL ON MENTAL HEALTH

Council Activities

The Council on Mental Health, since the last annual report, has held two meetings, November, 1958, and February, 1959; also two meetings of the Council's Planning Committee for the "Sixth Annual Conference of Mental Health Representatives of State Medical Associations" were held in February and April, 1959. A meeting of the Executive Committee of the Council was held in April, 1959. A third meeting of the full Council is scheduled for Oct. 16-17, 1959. The Council's primary concerns this year have been in studies relating to the medical uses of hypnosis; deliberations relating to licensure of clinical psychologists; and continued efforts toward strengthening relationships between the Council and the committees on mental health of the constituent medical associations.

During this past year the Council, with Board approval, appointed Dr. Leo H. Bartemeier and Dr. Leonard E. Himler to the newly formed Joint Committee on Mental Health in Industry, which is a joint effort with the Council on Industrial Health for the purpose of improving mental practices in industrial organizations.

Dr. Hugh T. Carmichael of the Council was appointed by the Board of Trustees to the Joint Commission on Accreditation of Hospitals, as its only present psychiatrist member.

Committee on Hypnosis.—In February, 1959, the Board of of Trustees voted to approve the establishment of a Committee on Hypnosis, composed of Dr. Harold Rosen, Chairman, Baltimore; Dr. M. Ralph Kaufman, Council Member, New York City; Dr. Zigmond M. Lebensohn, Washington, D. C.; and Dr. Louis J. West, Oklahoma City. The Committee has held two meetings, April and June, 1959, and is scheduled to have a third meeting in November, 1959. The primary objective of this Committee is to concern itself chiefly with the problem of implementing the suggestions and ideas expressed in the Council's Report on Medical Use of Hypnosis, which was approved by the Board of Trustees and the House of Delegates last year.

At its meetings, the Committee discussed future projects and voted to prepare a series of three or four articles on Medical Use of Hypnosis for publication as a special report in THE JOURNAL, and for compilation in manual form to be available for distribution to physicians throughout the country. The Committee believes that this will aid the immediate need to educate physicians who are now being bombarded with requests to sign up for two three-day courses in hypnotic techniques only. Another project in consultation with the Council on Medical Education and Hospitals, will be a report to the Board of Trustees outlining a proper curriculum for the teaching of hypnosis at medical school and postgraduate levels. It is hoped that a skeleton curriculum for inaugurating such teaching will be ready within the next few months.

Committee on Alcoholism.—Since the last annual report, the Committee on Alcoholism has held two meetings, September, 1958, and February, 1959. The Committee, continuing its attempt to carry out its 18-Point Program, undertook the project of establishing a curriculum for teaching alcoholism in the medical schools. Assistance was received from the Council on Medical Education and Hospitals, which also distributed the curriculum to the deans of all medical schools. The Committee now has under consideration the establishment of uniform terminology and definitions in the field of alcoholism, and will collaborate with the Association's Department of Standard Nomenclature of Diseases and Operations on this project. Plans are being made for a meeting in August, 1959.

Still available at Council headquarters is the Classified Abstract Archive of the Alcohol Literature for physicians and other interested groups as a reference guide to literature dealing with the problems of alcoholism.

Fifth Annual Conference of Mental Health Representatives of State Medical Associations.—Approximately 175 persons attended the Nov. 21-22, 1958, Council-sponsored Conference of Mental Health Representatives of State Medical Associations. The five main topics of discussion at this Conference were:

(1) Emotional Block Versus Brain Damage in the Diagnostic Categories of Mental Retardation or Mental Deficiency in School Children.
(2) Communicability of Mental and Emotional Illness.
(3) Education for Psychiatric Medicine.
(4) The Joint Commission on Mental Illness and Health—Progress and Problems.
(5) Mental Illness and Health in the Aged.

The Conference, as in past years, was chaired by Dr. Leo H. Bartemeier, the Council Chairman. The guest speakers in the morning and evening of Nov. 21 were: Dr. Gunnar Gundersen, President, American Medical Association; Dr. Ernest B. Howard, Assistant Executive Vice-president, American Medical Association; and Dr. Jonas E. Salk, Director, Virus Research Laboratories, University of Pittsburgh School of Medicine.

The Proceedings of the Conference have been published and distributed to all state medical associations and other participating organizations and guests. Copies are still available at the headquarters office.

Preparations are now being made for the Sixth Annual Conference scheduled for Nov. 20-21, 1959, at the Drake Hotel in Chicago.

At the meeting of the Council's Planning Committee in February, 1959, it was decided that there should be one unified topic broken down into a number of main facets. The theme selected and approved for this year's Conference is "Organized Medicine in Its Relationship to the Hospitalized Psychiatric Patient." Six main levels were selected for discussion by the Conference participants, i. e.: (1) state hospital level; (2) private hospital level; (3) general hospital level (psychiatric services in general hospitals); (4) outpatient psychiatric clinics; (5) rehabilitation programs, and (6) Veterans Administration hospitals.

It was also decided at the February meeting to invite the commissioners of mental health of the 50 states to attend this year's Conference. The Committee felt that the participation of the commissioners with the chairmen of the state association mental health committees will make the conference discussions and decisions with respect to improvements that can be made in the care and treatment of the mental patient much more effective. Subsequent meetings on this general theme at state levels will be encouraged to be organized and led by the state chairmen and commissioners jointly after the November meeting. Owing to the scope of this year's theme, it will be necessary to devote two full days to the Conference instead of a one-and-a-half-day meeting as in past years.

Joint Commission on Mental Illness and Health, Inc.—The Joint Commission on Mental Illness and Health closed its headquarters offices in Cambridge on June 30, 1959. Dr. Richard J. Plunkett, who was on part-time leave from the Association to act as associate director of the Commission, returned on a full-time basis to the headquarters office as of July 1, 1959. A skeleton staff will be maintained by the Joint Commission to complete the editing and publication of nine monographs as well as the final report of the Commission, which will be released in early 1960. Drs. Leo H. Bartemeier, Lauren H. Smith, Richard J. Plunkett and M. Ralph Kaufman (Chairman) are still retained as members of the Joint Commission's most important "Committee on the Studies," which reviews all material before final publication. Dr. Bartemeier continues as Chairman of the Board of Trustees of the Joint Commission and the Council is still represented by five of its members on the over-all body of the Joint Commission until the Commission becomes unincorporated, probably in early 1960.

Staff Activities

Activities of the headquarters staff this year as in past years revolve around the necessary implementation of decisions made by the Council which are approved by the Board of Trustees, and current projects of the Council. In this respect, the Secretary of the Council, with the Secretary of the Council on Industrial Health, agreed upon the organizational needs for setting up the first meeting of the Joint Committee on Mental Health in Industry. One of the decisions of this new Joint Committee was to publish an editorial in THE JOURNAL on alcoholism in the transportation industry. The editorial was prepared in preliminary form for approval of the members of the two Councils. Staff activities in this respect involved a bringing together and rediscussion of view-points so that the editorial would properly express the view-points of both Councils.

With regard to the Committee on Hypnosis, staff activity concerned the preparation and circulation to the Council members of a memorandum to the Board of Trustees requesting appointment of the Committee and appointment of members of the Committee. This necessitated a study of the background of the proposed Committee members and submission of this background material to the Board of Trustees along with the memorandum requesting the appointments. Staff activities for this Committee in the past year have also included heavy correspondence with doctors throughout the country who have become interested in the medical use of hypnosis, particularly with regard to where they might best apply for courses in hypnotic induction techniques, and in understanding the dynamics of psychology underlying the hypnotic process. In this we have so far not been able to provide fully satisfactory replies to these requests for the simple reason that there are no such courses in the United States that now fully satisfy the requirements of such a course as visualized by the members of the Committee on Hypnosis.

Staff activities regarding the Committee on Alcoholism this year involved the mechanics of inter-change between the Secretary's office and the Secretary of the Council on Medical Education and Hospitals to arrange for publication and distribution to deans of medical schools a basic curriculum for teaching about alcoholism at the medical school level; this document has been sent to the groups involved.

Considerable staff assistance was necessary during the past year for arranging space, time schedules and agenda for the November 1958 Annual Conference of Mental Health Representatives of State Medical Associations. This involved the preparation of invitation and descriptive material to the proposed representatives, not only of the state medical associations, but to associated participating organizations. As the agenda for each of these Conferences is set up, the staff also undertakes the collection and distribution to the Conference participants as much informational background material as is currently available concerning the immediate (five topics) of the Conference. In general the staff activities involve a continual correspondence with physicians in the United States who have a special interest in some aspect in the field of mental health, interest in what participating activities the Council may be undertaking in these fields, and correspondence with other organizations in the mental health field pointing toward co-operative endeavor in planning and carrying out programs that can be mutually agreed upon as advantageous.

The staff also follows through at the clinical and annual sessions of the Association all memoranda or recommendations made to the Board of Trustees with particular regard to additional information that might be required by the reference committees pertaining to projects or recommendations stemming from the Council.

The Council continues to work closely with many organizations in the field of mental and emotional health outside the Association. Some of these organizations are: American Psychiatric Association; Joint Commission on Mental Illness and Health; National Institute of Mental Health; American Psychoanalytic Association; American Nurses Association; National League for Nursing; and the American Association for Mental Deficiency. Within Headquarters itself the Council continues close cooperation with other Councils and Committees in work that touches upon or overlaps into other special council fields and/or pertains to the overall general efforts and programs of the Association.

COUNCIL ON NATIONAL DEFENSE

Council Activities

Meetings and Administrative Actions.—The Council and its two Committees each held two regular meetings during the period covered by this report, July 1, 1958-June 30, 1959. In addition, the Council held a special meeting on Dec. 14, 1958, in Chicago to review the draft report of the A. M. A. Commission on National Emergency Medical Care and make appropriate recommendations to the Board of Trustees. The Council met in regular session in Washington, D. C., on Nov. 16, 1958, and in Chicago on May 16, 1959. The Committee on Military Medical Affairs met in Washington, D. C., on Oct. 8-9, 1958, and in Chicago on May 4, 1959, while the Committee on Disaster Medical Care held regional meetings in Boston on Sept. 13-14, 1958, and in Colorado Springs on April 17-18, 1959, and a special meeting on March 10, 1958, at Fort Detrick, Md.

The Executive Committee of the Council met during the 1958 Clinical Session in Minneapolis and the 1959 Annual Meeting in Atlantic City. Moreover, Council and Committee members participated in numerous meetings with federal government officials, military leaders, and representatives of constituent medical societies and allied medical and health groups. In addition, Council and Committee members devoted a considerable amount of time to the special study on national emergency medical care.

The Board of Trustees, at its meeting in Minneapolis in December, 1958, approved the change in the name of the Council's Committee on Civil Defense to Committee on Disaster Medical Care. At the same time, the Board approved an increase in membership from seven to nine physicians for each of the Council's Committees.

The resignation of Council member Roscoe L. Sensenich, M.D., South Bend, Ind., a past-president of the Association, was accepted by the Board of Trustees at its meeting in Chicago on Feb. 6-7, 1959. As the fiscal year ended, there was one vacancy on the Council.

At the same meeting, the Board of Trustees appointed Henry A. Crawford, M.D., Cleveland, and Gerald D. Dorman, M.D., New York, to the two new positions on the Committee on Military Medical Affairs. Wayne P. Chesbro, M.D., Berkeley, Calif., and Francis C. Jackson, M.D., Pittsburgh, were appointed to membership on the Committee on Disaster Medical Care. There was one vacancy on the latter Committee as the fiscal year ended because of Dr. Sensenich's resignation.

The Role of the Council and Its Committees.—The Executive Committee of the Council reported on May 17, 1959, to the newly constituted Board of Trustees' Committee on Socio-Economic Activities and recommended a broad revision of the role of the Council in the military medical and disaster medical care areas. An expanded and more active program was recommended for the Committee on Disaster Medical Care. The Board Committee was furnished an outline of the mission and proposed activities of the Committee. Through the Committee on Disaster Medical Care, the Association would provide leadership and guidance in medical and health matters, as they pertain to civil defense and disaster preparedness, to individual physicians, constituent medical societies, national health associations and governmental agencies, and the general public.

In addition, the attention of the Committee was invited to the fact that there are nonmilitary medical activities in some departments and agencies of the federal government, such as the National Security Council, National Aeronautics and Space Administration and the Federal Aviation Agency, the responsibility for which has not been assigned to any council or committee of the Association. Moreover, it was suggested that the responsibility for some federal medical programs which is currently divided among several councils and committees within the Association possibly should be properly assigned to a single council or committee with "primary interest" and the responsibility for maintaining coordination with all other interested agencies of the Association.

Military Medical Activities.—In August, 1958, the Reorganization Act of the Department of Defense was enacted. This, in itself, is the most drastic reorientation of our nation's defense forces in the past 50 years. The Secretary of Defense was provided greatly increased authority, and an all-powerful enlarged Joint Staff, without medical or health staffing, was created.

To maintain liaison with the federal departments and agencies and secure the counsel of the senior military leaders of the medical services, the Committee on Military Medical Affairs held its fall meeting on Oct. 8-9, 1958, in Washington, D. C. In separate meetings the Committee was briefed by the following officials and their staffs: W. Palmer Dearing, M.D., Director of Health Services, Office of Civil and Defense Mobilization; Leroy E. Burney, M.D., The Surgeon General, U. S. Public Health Service; Frank E. Berry, M.D., Assistant Secretary of Defense (Health and Medical); Major General James P. Cooney, MC, USA, Deputy Surgeon General, Department of the Army, representing the Surgeon General, Major General Silas B. Hays; Rear Admiral B. W. Hogan, MC, USN, The Surgeon General, Department of the Navy; and Major General Dan C. Ogle, USAF, MC, The Surgeon General, Department of the Air Force.

At these meetings the Committee was briefed on various military medical subjects and on organizational structure, authority, rsponsibility, functions and current problems within the medical services of the military departments, the U. S. Public Health Service and the Office of Civil and Defense Mobilization. Such meetings with top level federal medical representatives have proved to be most fruitful in promoting discussion and maintaining liaison essential to the understanding of problems in the military medical area. This is of particular note at this time following the Lebanon and the Quemoy incidents involving U. S. forces, with no assigned medical responsibilities at the Joint Staff level.

Many matters in the field of military medicine were considered and recommendations made to the Council by the Committee on Military Medical Affairs at its Washington, D. C., and Chicago executive sessions. There follow some of the more important results.

Office of Assistant Secretary of Defense (Health and Medical) Continued.—The most significant action in the field of military medicine during the year was the decision of the Secretary of Defense, with the concurrence of the President, to continue the Office of Assistant Secretary of Defense (Health and Medical). The Defense Reorganization Act of 1958, Public Law 85-599, approved Aug. 6, 1958, provides, among other things, that the number of Assistant Secretaries of Defense be reduced from nine to seven. Prior to passage of this legislation, the Board of Trustees approved the recommendation of the Council and its Committee on Military Medical Affairs to actively oppose any downgrading of the Office of Assistant Secretary of Defense (Health and Medical). Numerous letters were written and consultations held between the Secretary of Defense, his advisors and officials of the Association and the Chairman of the Committee on Military Medical Affairs. In addition, the Chairman of the Committee on Military Medical Affairs testified on behalf of the Association before the Senate Committee on Armed Services. There is reason to believe that the decision to retain the position of Assistant Secretary of Defense (Health and Medical) was the result, to a considerable degree, of the Association's activities.

"Doctor Draft Law" Extended.—Public Law 86-4, approved March 23, 1959, extended to July 1, 1963, the induction provisions of the Universal Military Training and Service Act of 1948, as amended, which includes the special call-up and pay provisions applicable to physicians. In letters to the Chairmen of the Committees on Armed Services of the U. S. Senate and House of Representatives, the Association, upon recommendation of the Council, affirmed its position of 1957 that, ". . . if the demands for the defense and security of our nation are such that, in the opinion of Congress, it is necessary to have a draft act to maintain the strength of our Armed Forces, then the extension of the present legislation would be one method to insure sufficient physicians for the military services."

In that a four-year rather than a two-year extension of the law was proposed, the Association suggested that the additional two-year extension should be fully explained and justified because scientific and technical advances have resulted in rapidly changing concepts of military manpower requirements. Consequently, there have resulted, directly or indirectly, current and projected reductions in the strength of the Armed Forces and, conceivably, future manpower requirements may be subject to further downward revisions. Thus, it was the Association's view that a two-year rather than a four-year extension of the law would permit a timely review of military manpower requirements in light of pertinent changes in the then current military situations. This would have been particularly desirable with respect to the call-up of medical allied specialists because of the increasing demands and requirements of the civilian population for the nation's medical and health resources.

Equitable Military Call-up of Physicians in Time of National Emergency.—Resolution No. 63 adopted by the House of Delegates at the Annual Meeting in San Francisco in June, 1958, directed that liaison be effected with the Department of Defense for the purpose of effecting a more equitable call-up of physicians by the military services in time of a national emergency.

When this topic was mentioned by the Committee Chairman at the meeting of the Committee on Military Medical Affairs with the Assistant Secretary of Defense (Health and Medical) and members of his staff on Oct. 8, 1958, the Committee was informed that stand-by legislation had been drafted and was available for referral to Congress should the need arise. It was stated that this proposed legislation was a classified document. The Council informed the Board of its inability to further discuss this subject with the Department of Defense.

The utilization of physicians, in fact all medical and health personnel, in a grave national emergency is not of military concern exclusively. The needs and requirements of the civilian population are of equal importance. Consequently, the Office of Civil and Defense Mobilization was advised that the Association felt that it may be desirable for OCDM to request the Department of Defense to review and coordinate this matter with OCDM inasmuch as it has a direct bearing on the extent of medical and health manpower which would be available for the civilian population in time of national emergency.

In response, the Association was informed that OCDM has the continuing advice of its Health Resources Advisory Committee.

Armed Forces Institute of Pathology.—At its Clinical Meeting in Minneapolis in December, 1958, the House of Delegates unanimously approved a resolution that the Association petition the Secretary of Defense to provide for general or flag rank for the Director of the Armed Forces Institute of Pathology during his tenure of office. In response, the Assistant Secretary of Defense (Manpower, Personnel and Reserve) advised on March 26, 1959, that it is the view of the Department of Defense that the establishment of the position of Director of the Armed Forces Institute of Pathology for general or flag rank is not desirable. The reasons advanced were, first, that the specialist qualifications which the Director must possess preclude the routine assignment of a general or flag officer to the position; and second, the services are unable to accommodate within present general or flag officer authorizations a number of positions for which the assignment of a general or flag officer is considered fully justified.

Subsequently, at its Annual Meeting in Atlantic City in June, 1959, the House of Delegates reaffirmed its position and went on record in active support of proposed legislation in the 86th Congress to establish general or flag rank for the Director of the Armed Forces Institute of Pathology during his tenure of office. Copies of this resolution were transmitted to the President of the United States, the Surgeons General of the Departments of Army, Navy and Air Force, and the Chairmen of the Committees on Armed Services of the United States Senate and House of Representatives.

Medical Representation to Joint Chiefs of Staff.—Under the Department of Defense Reorganization Act of 1958, the Joint Chiefs of Staff now have an operational or command as well as a planning capability. Thus, the Council and its Committee on Military Medical Affairs believe that a medical section in the Joint Staff is essential. Currently there are six principal divisions of the Joint Staff. To effect coordinated medical planning for the combined, unified and special commands, the Committee feels that the Joint Staff should incorporate medical plans in the tactical and strategic plans. The Lebanon military operation in the summer of 1958 demonstrated the undesirable results of the three services making independent and uncoordinated medical plans for a combined operation.

On Aug. 20, 1958, the Association, in a letter to the Chairman, Joint Chiefs of Staff, expressed its concern as to how the Joint Chiefs of Staff planned to coordinate the support from the three military departments in the field of medicine, hospitalization, evacuation and sanitation with the combined, unified or special commands. The Association inquired as to what provisions would be made in the reorganized Joint Staff for medical intelligence covering all three services, medical planning for hospitalization, supplies and evacuation, and medical logistics for both tactical and strategic operations in overseas and separate theater commands.

The Chairman of the Joint Chiefs of Staff advised the Association on September 5, 1958 that: the Department of Defense Reorganization Act of 1958 does not change the policy that the military departments continue to be responsible for the support of the forces and personnel except in those cases where one service may provide support to another for reasons of economy and efficiency; the military departments working with the Assistant Secretary of Defense (Health and Medical) will formulate policies and procedures for the care of their military personnel; the military departments will continue to exercise medical planning for hospitalization, supplies and evacuation and medical logistics for the support of the personnel, based on joint strategic plans; and the Joint Chiefs of Staff will participate to the extent it may be necessary to ensure adequate medical support to a unified command and they will recommend allocation of medical resources when necessary and, in this connection, medical logistics will receive adequate consideration by trained personnel on the Joint Staff assisted by the qualified medical personnel of the military departments.

The Committee has noted no unclassified announcement to this date to support this position. The new directive of the Assistant Secretary of Defense (Health and Medical) makes no mention of its responsibilities in this field.

Military Nutritional Surveys.—The Committee has followed with considerable interest the efforts and programs of the federal government and particularly the Department of Defense in the food and nutritional field surveys in Asia, Africa, Europe, and South America. This presents a somewhat unorthodox approach to national defense and security.

National Defense Blood Program.—The Committee, following the Lebanon crisis, visited Washington, D. C. and requested information concerning a national defense blood program. The Committee is happy to note that since then liaison and coordination between the American Red Cross and the Department of Defense has been once again officially established with respect to a National Defense Blood Program.

Medicare Program.—In October, 1958, the Assistant Secretary of Defense (Health and Medical) issued directives *curtailing the care of military dependents in civilian facilities.* This included the denial of cancer detection, diagnosis and treatment in civilian facilities. Upon representation by the Committee, this matter was reviewed by the Department of Defense and in May 1959 directives re-established this care for female dependents suffering from cancer.

Federal Legislative Proposals.—The Council on National Defense advised the Council on Legislative Activities of its unalterable opposition to H. R. 720, a bill to provide for the establishment of a United States Armed Forces Medical Academy. Bills identical with H. R. 720 were introduced in the 84th and 85th Congresses. H. R. 1055 and a companion bill, S. 596, of the 85th Congress were not the subject of Committee hearings. The then A. M. A. Committee on Legislation had reviewed these bills and recommended opposition. The Board of Trustees approved this recommendation as it did the prior recommendation of the Committee to oppose the *identical bill, H. R. 2096 of the 84th Congress.*

The Council also advised the Council on Legislative Activities of the interest of the Council on National Defense in H. Con. Res. 71 and requested that the Council on National Defense be kept advised on developments in regard to this resolution. H. Con. Res. 71 is a concurrent resolution to establish a joint congressional committee to conduct an investigation and study of the alternatives to conscription.

The Council on Legislative Activities was requested to give favorable consideration to a recommendation to the Board of Trustees that the Association support S. 185, a bill to strengthen the Commissioned Corps of the U. S. Public Health Service through revision and extension of some of the provisions relating to retirement, appointment of personnel and other related matters. It was the opinion of the Council that officers of the U. S. Public Health Service should have the same privileges and benefits as medical officers of the military services.

With the concurrence of the Council on National Defense, the Council on Legislative Activities recommended to the Board of Trustees that the Association change its position to one of opposition to the creation of a Federal Advisory Council of Health. In the 84th and 85th Congresses, bills to create a Federal Advisory Council of Health were introduced but did not pass. Those bills provided that such Council would be comprised of four members of the medical profession and three with distinguished records in fields other than medicine, appointed by the President of the United States. The Council on National Defense is of the opinion that it is preferable that existing federal medical authority be implemented rather than that a new Federal Advisory Council be established. The creation of a Federal Advisory Council of Health was recommended by the Hoover Commission Report on Federal Medical Services of February, 1955. Such recommendation was actively supported in principle by the Association.

Disaster Medical Care Activities.—During the fiscal year the Committee on Disaster Medical Care held its third and fourth regional meetings in Boston and Colorado Springs in Office of Civil and Defense Mobilization Regions 1 and 6 respectively. Region 1 consists of the New England states, New York and New Jersey, while Region 6 embraces Colorado, Wyoming, North and South Dakota, Nebraska, Kansas, Minnesota and Iowa.

On the first day of these two-day meetings, the Committee meets with the executive secretary of the medical society of each state in the region, the chairman of each state society's emergency medical service committee and the chairman of the committee on civil defense of the woman's auxiliary to each state society as well as federal medical civil defense officials. The second day is devoted to an executive session of the Committee.

These regional meetings provide a forum for the exchange of ideas and information which is most helpful in the coordination of medical civil defense efforts. The meetings held to date in Atlanta, Dallas, Boston and Colorado Springs have been well attended and very successful in providing a stimulus for renewed effort and cooperation among medical civil defense people at state, regional and national levels of activity.

Some of the more important accomplishments of the Council and its Committee on Disaster Medical Care during the past year follow.

Chemical and Biological Defense.—At the May, 1959, meeting of the Council, a resolution was adopted that the federal Office of Civil and Defense Mobilization be requested to: (1) take appropriate action to have pertinent biological and chemical information declassified and released to the public to permit free discussion and an opportunity for preparation for biological and chemical defense and (2) to give serious consideration to the development of a realistic education and training program dealing with detection, decontamination, and other protective measures against biological and chemical warfare, including the stockpiling of appropriate supplies and equipment for subsequent distribution and use.

OCDM advised the Council on June 4, 1959 that the Department of Defense, the Department of Health, Education, and Welfare and OCDM are now working on the problem of declassifying such information for release to the public. In regard to an education and training program, OCDM is delegating this responsibility to the Department of HEW. OCDM also advised that the Council's resolution coincides with the training and education objectives contained in the National Plan for Civil Defense and Defense Mobilization.

Chemical and Biological Warfare Briefing.—On March 11, 1959, the members of the Committee on Disaster Medical Care, the members of the Health Resources Advisory Committee to the Office of Civil and Defense Mobilization and other federal medical representatives were briefed on chemical and biological warfare concepts and protection at Fort Detrick, Maryland.

Utilization of Reservists for Civil Defense Duties.—The Association's House of Delegates meeting in Clinical Session in December 1958 unanimously approved a resolution favoring the utilization of reserve Armed Forces units and personnel for civil defense operations. A copy of this resolution was transmitted to the Secretary of Defense and the Director, Office of Civil and Defense Mobilization.

The Director of the Office of Civil and Defense Mobilization informed the Association that he was in agreement with the principles of the Association's resolution and that the proposed program has merit. The Director of OCDM also advised that the Health Resources Advisory Committee of OCDM had reviewed and studied the resolution and had endorsed its adoption. Moreover, the Director of Health Services, OCDM, will make an evaluation as to the feasibility of its adoption. The Director of Health Services plans preliminary discussion with representatives of the interested federal agencies. The Department of Defense reply indicated that the Department regularly assists and strongly supports the Office of Civil and Defense Mobilization in its efforts to emphasize and develop such plans and the attainment of optimum survival capabilities.

Self Help in a Disaster Situation.—At its meeting on May 16, 1959, the Council, upon recommendation of its Committee on Disaster Medical Care, voted to support in principle the proposition that health information should be disseminated to the public for use in post-attack situations where expert medical service may not be available. The Director of Health Services, Office of Civil and Defense Mobilization, initiated a discussion of this subject before the Association's Board of Trustees on Feb. 7, 1959.

Upon notice of the Council's action, the Director of Health Services, OCDM, advised on June 2, 1959 that the U. S. Public Health Service has initiated a study to determine what people will have to know and what is the best method of teaching them. On June 9, 1959, the Chief, PHS Division of Health Mobilization, informed the Council that the Boston Public Health Service Hospital, which has the job of determining what people will have to know, has determined that the best approach to developing the essential knowledge would be in the preparation of a standardized procedures manual related to a standardized emergency medical kit. After evaluation, discussion and revision of the material for the manual by a committee recommended by the Schools of Public Health of both Yale and Harvard, the material will be submitted to the Council's Committee on Disaster Medical Care for review and recommendations. The PHS Division of General Health Services has the task of developing a feasible acceptable method of teaching the layman the material that is developed at Boston. This Division's proposals and progress will be submitted at intervals to our Committee for advice, guidance and informational purposes.

Commendation of U. S. Army Medical Service.—At its meeting in Minneapolis in December 1958 the Board of Trustees, upon recommendation of the Council, adopted a resolution of commendation in regard to the achievements of the United States Army Medical Service in conducting disaster medicine courses.

Shortly after World War II, the Army Medical Service initiated courses relating to medical matters incident to atomic and nuclear warfare. Up to December, 1958, nearly 50 courses had been conducted from which over 6,000 students have been graduated.

The resolution of commendation was transmitted to The Surgeon General, Department of the Army, and to the Secretary, Department of the Army.

Dissemination of Civil Defense and Disaster Information.—Meeting in Clinical Session in Minneapolis in December, 1958, the Association's House of Delegates strongly urged that pertinent information relating to civil defense and/or disaster planning be disseminated in The Journal of the American Medical Association and in the publications of state and county medical societies. In implementation, The Journal of Jan. 24, 1959 was a civil defense issue containing all papers presented at the Ninth County Medical Societies Civil Defense Conference of November, 1958, which is sponsored annually by the Council on National Defense. The proceedings of the Seventh National Medical Civil Defense Conference held in Atlantic City on June 6, 1959 will appear in the Sept. 12, 1959, issue of The Journal.

OCDM 200-Bed Civil Defense Emergency Hospital.—On May 27, 1959, the Council requested the Office of Civil and Defense Mobilization to consider the initiation of action to assure that future assemblies of the Civil Defense Emergency Hospital be functionally packed and marked in order to facilitate periodic inspection, use and repacking of the unit's equipment.

In response, on June 9, 1959, OCDM informed the Council that the need for a broader program of quality control has been recognized and that under the pending executive assignment of certain medical and health functions to the Department of Health, Education, and Welfare, it is hoped that an expanded program will be possible. OCDM and the Public Health Service will give full consideration to the Council's recommendations.

OCDM First-Aid Station and Emergency Treatment Station.—Pursuant to the action of the Council at its meeting on Nov. 16, 1958, the Chairman of the Committee on Disaster Medical Care informally discussed with Office of Civil and Defense Mobilization officials the Council's proposal that the OCDM First-Aid Station and Emergency Treatment Station be field tested. OCDM advised that federal policy in this area is under review in light of proposed further assignments of certain responsibilities for civil defense health services of the federal government to the Department of Health, Education, and Welfare for discharge by the U. S. Public Health Service. On finalization of such assignments, the Council's recommendation will be considered.

Flying Physicians Association.—During the year, the members of the Committee on Disaster Medical Care met several times with representatives of the Flying Physicians Association in regard to the utilization of the resources of that Association in disaster situations. As a result of these meetings, as well as a joint meeting with federal medical civil defense officials, it was agreed that the Flying Physicians Association could render maximum assistance through its membership participating in the civil defense plans and programs of the state medical associations and those of the state and local governments. The Office of Civil and Defense Mobilization advised state civil defense directors that members of the Flying Physicians Association are being urged to contact them to volunteer their services. The Council sent a letter to the chairman of the civil defense committee of each constituent state medical association urging those committees to cooperate with the Flying Physicians Association.

Air Defense Command Briefing.—While in Colorado Springs for its fourth regional meeting, the Committee on Disaster Medical Care was briefed by medical officials of the North American Air Defense Command at Ent Air Force Base. The Committee also toured the facilities of the Air Force Academy and was briefed by the Academy's Surgeon.

Federal Legislative Proposal.—The Council on National Defense recommended that the Council on Legislative Activities give favorable consideration to a recommendation to the Board of Trustees that the Association actively support S. 1628, a bill to provide for the vesting of primary responsibility for the protection of the public health and safety from radiation hazards in the U. S. Public Health Service. The Council is of the opinion that air and water pollution is a continuing Public Health Service responsibility and the proposed legislation is a logical extension of the basic responsibility of PHS in keeping with its normal functions concerning public health safeguards.

Special Council Activities: Report on National Emergency Medical Care.—The special study and report prepared at the request of and for the Office of Civil and Defense Mobilization was conducted by a special commission under the guidance of the Council. The report embodies recommendations with respect to the planning, training, and operational organization needed as a basis for a national emergency medical care plan for the treatment and care of casualties and noncasualties prior to, during and after a thermonuclear attack upon the United States.

The threat of nuclear warfare has imposed on the medical and allied health professions of this country a tremendous responsibility in the nation's effort to survive. In view of the important role that the medical profession must recognize and assume in civil defense preparedness, the Council is submitting a separate summary report to the

Board on this study project on national emergency medical care. The summary report will outline the problems and recommendations thereto concerning the role of the medical and associated professions, their functions, responsibilities, and training for medical disaster preparedness.

Ad Hoc Committee on Aeronautics and Space.—This Committee was appointed by the Board of Trustees to advise on the evolution of the government agencies and legislation affecting them in the area of aeronautics and space. Council members Harold C. Lueth, M.D., and Richard L. Meiling, M.D., were selected for membership on the Committee. Leonard W. Larson, M.D., was designated the chairman of the three-member Committee.

On June 2, 1959, the Committee submitted a report and recommendations to the Board of Trustees. The Committee recommended that the Association continue to follow the developments in the space programs and that this project be assigned to one of the existing councils or committees as the "responsible agent" of the Association. The Committee further recommended that, inasmuch as the major portion of the effort in space research and exploration is based upon military considerations, that this assignment be made to the Council on National Defense. As the responsible agency, the Council would continue its liaison with the military services concerned with space medicine and would effect liaison with the National Aeronautics and Space Administration. All other Association councils and committees having an interest in the space program would coordinate their activities with the Council on National Defense. This would permit comprehensive reports on space medicine to the Board of Trustees from a single source.

Appreciation.—The Council and its Committees are grateful for the cooperation and assistance received from the Board of Trustees, other councils and committees and officers of the Association, from allied professional organizations and from officials of federal government agencies with whom we have worked during the past year.

Respectfully submitted,

Reuben A. Benson, M.D.
Carroll P. Hungate, M.D.
Perrin H. Long, M.D.
Harold C. Lueth, M.D.
Walter B. Martin, M.D.
Richard L. Meiling, M.D.
David Henry Poer, M.D.
Herbert B. Wright, M.D.
Harold S. Diehl, M.D., Chairman

August 27, 1959

Staff Activities

This report covers the activities of the headquarters staff of the Council on National Defense for the period July 1, 1958 to June 30, 1959.

Meetings.—The staff prepared agenda, made arrangements for, and provided administrative and stenographic assistance for the ten meetings of the Council, the Committees, and the Executive Committee of the Council. The staff implemented the actions of the Council and Committees throughout the reporting period. Between meetings, members were kept currently advised on significant activities and developments. Appropriate reports on Council actions and staff implementation were furnished the Office of the Executive Vice President of the Association.

In addition, the following meetings were attended by staff members:

July 1958—Conference in Philadelphia with Program Committee of County Medical Societies Civil Defense Conference.
August—Conference in Battle Creek with representatives of OCDM on medical civil defense matters.
September—Conference in Battle Creek with representatives of OCDM on medical civil defense matters.
October—Speaker in Chicago at meeting of Woman's Auxiliary to A. M. A.
—Speaker in Philadelphia at meeting of Pennsylvania Nurses Association.
November—Attended in San Antonio meeting of International Symposium on Space and Medicine.
—Attended in Washington, D. C. meeting of Association of Military Surgeons.
December—Attended in Minneapolis conference on Federal Medical Services.
—Attended in Minneapolis Clinical Session of Association.
—Conference in Minneapolis with officers of Flying Physicians Association on civil defense program of that organization.
—Conference in Chicago with representatives of Department of the Army and National Medical Veterans Society on military medical matters.
January 1959—Conference in Washington, D. C. with military representatives on program of Seventh National Medical Civil Defense Conference.
February—Attended in San Antonio Army Medical Service course on Management of Mass Casualties.
March—Conference in Washington, D. C. with representatives of OCDM and Flying Physicians Association on civil defense program of Flying Physicians.
—Attended in Albuquerque military course on Medical Symposium at Armed Forces Special Weapons Project.
—Attended in Washington, D. C. medicolegal conference.
April—Conference in Detroit with Program Committee of County Medical Societies Civil Defense Conference.
—Attended in Cleveland medicolegal conference.
May—Conference in Atlantic City with military representatives on Seventh National Medical Civil Defense Conference in June 1959.
June—Staffed in Atlantic City Seventh National Medical Civil Defense Conference.
—Attended in Atlantic City Annual Meeting of Association and spoke at meeting of Woman's Auxiliary to A. M. A.
—Attended in Washington, D. C. hearings of Joint Committee on Atomic Energy on environmental and biological effects of nuclear warfare.

National Emergency Medical Care Project.—The staff of the Council participated in a number of meetings in Minneapolis, Battle Creek, Washington, D. C., and Chicago devoted to the study and research project of the special A. M. A. Commission on National Emergency Medical Care. After the Commission completed its mission and the Commission staff released in January, 1958, the staff of the Council carried on the many administrative actions and staff functions necessary in the review, revision, printing, transmittal of the report to the government, and contemplated distribution to medical and health organizations and personnel. Throughout the reporting period, the Council staff assisted the Commission and its staff in the many administrative actions required in furtherance of the project.

Survey of Separated Military Physicians.—The opinion survey begun in 1952 among physicians recently separated from active military duty continues to achieve salutary effects in encouraging not only the improvement of conditions under which medical service is performed in the military but also the maintenance of present high standards. During the current fiscal year, the staff has distributed 4,471 questionnaires of which 2,458 were completed and returned. Results of this survey are compiled each calendar year and published in The Journal. A summary of the compilation is also published in the *United States Armed Forces Medical Journal.*

Physician Placement Assistance.—In a program initiated in 1952 the staff continues to assist physicians being released from active military service by providing information on available civilian medical opportunities. The staff has made such information available to 2,404 physicians during the current fiscal year and received 359 requests for assistance. These physicians were given placement assistance with the cooperation of the Council on Medical Service.

Liaison with Physicians on Active Military Duty.—The staff continues to prepare a monthly article for publication in the *United States Armed Forces Medical Journal.* The pages made available to the Association by the *USAFMJ* are utilized to inform military physicians as to the objectives and activities of the Association, as well as what American medicine is doing currently. Council members also contribute timely articles for the publication from time to time.

Central Repository for Medical Credentials.—The services of the World Medical Association's Central Repository for Medical Credentials, which became available to doctors of the world on July 1, 1958, was publicized to the executive secretaries of state medical associations on Sept. 25, 1958. It was suggested that information on the availability of this worthwhile service be published in state medical association journals and other publications. Acknowledgements were received from many state associations that the service would be publicized. A letter of appreciation was received from Dr. Louis H. Bauer, Secretary General of W. M. A., in regard to this action.

Physician Travel to Hospital in Emergency Situation.—Pursuant to an action taken at the Ninth County Medical Societies Civil Defense Conference in Chicago in November, 1958, the staff communicated with the executive secretaries of state medical associations in regard to the problems involved in getting physicians to hospitals under emergency conditions. A request was made to alert the state associations' committees on emergency medical care to the problem. The committees were asked to work out a solution with local and state law enforcement agencies so that such travel by physicians could be expedited.

County Medical Societies Civil Defense Conference.—The ninth conference of the civil defense organization of the county medical societies, which was held in Chicago, Illinois on Nov. 8-9, 1958, required a considerable amount of time and effort of the staff, in both the planning and presentation of the program. Participating at the most successful conference to date were 217 physicians and allied medical and health personnel from 31 states, the District of Columbia, Puerto Rico, and Canada. Honorable Leo A. Hoegh, the Director of the Office of Civil and Defense Mobilization, was one of the featured speakers. This conference is sponsored annually by the Council on National Defense to inform, assist and encourage medical and health personnel at the local level to plan and prepare to render services which will alleviate suffering and save lives in disaster situations.

All arrangements for these conferences, including invitations and publicity, are handled by the staff. A well received additional feature of the conference was a display, that was prepared by the staff, of medical civil defense publications.

National Medical Civil Defense Conference.—The seventh National Medical Civil Defense Conference was held in Atlantic City on June 6, 1959. All arrangements for these conferences, including invitations and publicity, are handled by the staff. This year's conference was a departure from past conferences in that the program was presented by the United States Army Medical Service. Outstanding medical military leaders sustained the interest of the audience throughout the day with a presentation of a condensed one-day version of the Army Medical Service's excellent one-week course on the Management of Mass Casualties.

The conference was attended by 297 physicians and allied medical and health personnel from 41 states, the District of Columbia, Hawaii, and Canada. Dr. Louis M. Orr, the then President-elect, welcomed the conferees on behalf of the Association while Major General Leonard D. Heaton, The Surgeon General, United States Army, opened the mass casualty care program. The papers presented at the conference appeared in the Sept. 12 issue of THE JOURNAL.

Courses on Management of Mass Casualties.—Under an arrangement with the Office of The Surgeon General, Department of the Army, the Association is given a quota for spaces for civilian physicians to attend the military courses on Management of Mass Casualties. The Council staff publicizes this information and processes applications received from civilian physicians. The one-week courses are conducted at Walter Reed Army Medical Center, Washington, D. C., and Brooke Army Medical Center, San Antonio, Texas.

During the reporting period, seven spaces were filled through the facilities of the Council. For the fiscal year starting July 1, 1959, a total of 16 spaces for these courses have been allotted to the Council.

Publications.—Since May, 1951, the staff has prepared the *Civil Defense Review*, a bi-monthly publication which is distributed to approximately 2,000 civilian and military physicians, allied medical and health personnel, and federal, state, and local civil defense officials and organizations. The *Review* is devoted primarily to the medical and health aspects of civil defense.

There has also been published in THE JOURNAL and other similar publications selected articles and addresses on the medical aspects of civil defense. In addition, the Jan. 24, 1959 issue of THE JOURNAL was a special civil defense issue containing all papers presented at the Ninth County Medical Societies Civil Defense Conference.

Informational material on the medical aspects of disaster medical care and medical planning for civil defense is widely distributed by the staff.

Mass Immunization.—At the June, 1958 meeting of the Board of Trustees, the Special Committee on Influenza was discharged by the Board and the subject of mass immunization was referred to the Council for study. During the reporting period, the principal implementation of Council action was the distribution by the staff of questionnaires to constituent state medical associations and a sample of 2,000 physicians throughout the United States concerning operations and activities of Asian Influenza programs.

A final report on the development of a mass immunization stand-by program has been delayed pending coding, editing, tabulating, and analyzing the information contained in the completed questionnaires which have been received.

Ad Hoc Committee on Acronautics and Space.—This Committee, composed of Drs. Leonard W. Larson, Chairman, Richard L. Meiling, and Harold C. Lueth, members, was appointed by the Board of Trustees to advise on the evolution of the government agencies and legislation affecting them in the area of aeronautics and space. Through administrative staffing by the Secretary of the Council on National Defense, the Committee has been kept informed of the various space programs. The Secretary is currently maintaining a resource and reference file on astronautics and space.

COUNCIL ON RURAL HEALTH

Council Activities

The Council on Rural Health is composed of nine physicians from different areas of the country and each Council member is responsible for a certain group of states designated as regions. In June, 1945, the American Farm Bureau Federation invited the American Medical Association to join it in a study of rural health problems. For this purpose A. M. A. created a committee which is now the Council on Rural Health. Other rural organizations were invited to augment this cooperative program. There are now 13 medical and nonmedical advisors representing the Farm Bureau, the National Grange, the Extension Services of the Land-Grant Colleges, the American Agricultural Editors Association, the Farm Foundation of Chicago, the Woman's Auxiliary to the

A. M. A. and the American Veterinary Medical Association. The valuable contributions of these groups has given us a fine cross-section of rural thinking. These professional, educational, and producer groups also carry on programs at the state and regional level. The coordination of state programs geared to a common objective would certainly increase the effectiveness of all these programs.

A resolution passed by the House of Delegates at the clinical session in December, 1957, reads:

> "That the House of Delegates urge each state medical association to give greater support and encouragement to its state rural health committee in its work with state farm organizations and rural groups, and encourage said committee to ask county medical societies to appoint a physician or a committee of physicians to form a closer liaison with and work with all local farm organizations and rural groups."

The House of Delegates at the clinical session in December, 1958, adopted the following report of the Reference Committee:

> "Dr. F. A. Humphrey appeared before the Reference Committee and explained the current activities of the Council. The Committee endorses the principles under which the Council works and notes with satisfaction the many activities which the Council is continuously carrying on. It was brought out during the course of the hearing that a certain amount of apathy exists on the part of individual physicians as regards cooperating with the various rural organizations. Your committee recognizes the great demand on the time of individual physicians, but nevertheless feels compelled to encourage members of the Association to cooperate individually with the Farm Bureau, the Grange and similar organizations whenever opportunity and time permit."

Cognizant of both the resolution and the report of the Reference Committee, the Council has called upon the members of all state Rural Health Committees to assist in carrying out this program. Chairmen of Rural Health Committees in a number of states have directed letters to county societies urging that a Rural Health Committee be appointed in the counties where one does not exist, to work more closely with rural and farm organizations in their respective areas.

Farm-City Week.—The Rural Health Committees in numerous states have cooperated in the National Farm-City Week program which for the past four years has been spearheaded by Kiwanis International.

Regional, State, District, and County Meetings.—From among the 45 states having Rural Health Committees, 14 of them have held state Rural Health Conferences, and a regional conference was held in the Northeast which combined a group of 10 states. Preceding this conference a meeting was held with advisory members from the various farm groups to formulate the regional program, and in this particular instance it is the Regional Director's belief that this type of meeting does a great deal to bring together varying people who are interested in rural health. Florida's program through its state Rural Health Council is creating the best leadership for the various rural groups in that state. Its twice yearly council meetings are well attended, the spirit of cooperation exemplary and its attitude, aggressive; and its Regional Director feels this is a state of which we can be proud. In the state of North Carolina, this year four district meetings were held, instead of a state meeting. These were all well attended. In addition, two health programs were held in connection with the annual State Farm and Home Week, sponsored by the Home Demonstration Department of the Agricultural Extension Service. The state leader arranged these programs, inviting the local physicians to participate; the state society feels that this is further indication of physical cooperation and interest in rural health activities. In each instance where state or regional conferences have been held, the Regional Directors have assisted in program planning and have participated in these conferences.

Dr. F. S. Crockett as Council Chairman has worked through the entire year maintaining personal contacts with advisory members, participating in a number of state Rural Health Conferences, and consulting with members of various state Rural Health Committees and state officers of State Farm Bureau organizations. He has held three conferences with officers of the American Farm Bureau Federation relative to better liaison with that organization.

Of particular importance to the Chairman was a meeting he attended of the co-chairmen of the Indiana Committee on Rural Health with the president of the Indiana Farm Bureau relative to re-activating the rural health work in that state. As a result of that meeting, a joint meeting of various medical and rural groups is being planned in order to explore areas of cooperation that will be beneficial to the farm groups as well as the medical profession. He also attended several county meetings in connection with re-activation of the state Committee on Rural Health. Dr. Crockett has worked very closely with the Cardiac Research Project at Purdue University, acting as liaison between the state Rural Health Committee and the various other rural organizations. He has participated in the Senior-Junior Medical Day programs in several states, and also has assumed full responsibility for carrying out all plans and programs in connection with the 14th National Conference on Rural Health in Wichita, Kan., as well as carrying out the various other routine duties delegated to the Chairman by the Council.

Last July at the suggestion of the Council, the Extension Committee on Organization and Policy of the Land-Grant Colleges appointed a study committee to make a survey to establish better liaison between the two groups, and to consider (1) goals fixed by the Extension Services in all matters relating to the health of rural people; (2) availability of services and professional resources of the A. M. A. for the benefit of those whom both seek to serve; and (3) definition of duties of the health educator on the Extension staff.

The Council is represented on this committee by two members from its Advisory Committee and its past and present Chairmen. Several meetings were held at which progress reports were furnished. The report in final form was presented at the Advisory Committee-Council meeting on Sept. 11.

Lack of personnel has prevented the Council from giving as much active and continuous support at the state and county level as is necessary to carry on the most successful program, and it is hoped that a suitable Field Director will be employed as early as practicable.

Council Chairman Visits South America.—Dr. Crockett representing the American Medical Association made a tour of South America under the sponsorship of International Seminars, Inc. This trip covered eight major countries and nine major cities and provided contacts with local physicians as well as discussions on organization and policy of medical societies and inspection of various medical schools and hospitals. A full report of this trip was personally presented to the Board of Trustees with his recommendations.

Farm Magazine Health Column Service.—In 1956 the Council inaugurated a farm magazine health column service which was concluded about three months ago. These health articles were prepared by physicians, edited by a special lay writer, and distributed through the Council to executive secretaries for distribution to farm magazine editors. This service was enthusiastically received and since its discontinuance, the Council has received many letters from farm editors asking for additional service of this type.

Medical Scholarship and Loan Funds and Preceptorship Programs.—In a number of states carrying on successful medical and scholarship loan programs, this is an activity of the state Rural Health Committee. In Minnesota the seventh rural medical scholarship has been awarded. In Ohio the 11th scholarship has been awarded this year. In Illinois, this scholarship program was established in 1948; to date

25 doctors are serving rural areas under this program and 6 who are now in military service will go into rural practice this year. Eleven more are serving as interns in various hospitals around the state and 13 who have been approved this year will join 43 other students already in medical school. This particular program carries with it the stipulation that the students agree to practice five years in a rural area after completing medical training, internship, and military obligations. In Kentucky, 48 former fund recipients are now in practice in rural Kentucky areas—23 of this number have fulfilled their moral obligation to the Fund and 25 are in the process of doing so. Seventy-nine are in medical school or taking internship training. Twelve recipients are now in the armed forces and seven have practiced in rural areas and have completed their obligation; four are currently completing specialty training. Other states active in similar rural medical scholarship programs are Virginia, West Virginia, and Indiana.

In Iowa the Rural Health Committee has worked with the preceptorship committee in gaining greater acceptance for this program from the members of county medical societies because it feels that the experience provided through participation in the program constitutes the best means of persuading young doctors to practice in small communities. In this state the Rural Health Committee is also responsible for the physician placement service. This is also true in Indiana and Wisconsin. Several other states are participating in this program.

The preceptorship program in Kansas, which has become nationally known as the "Kansas Plan," continues to be most successful and has the wholehearted support of the medical society as well as the medical schools in that state. It is used as a pattern for other states to follow.

Council and Advisory Meetings.—Two meetings of the full Council were held during this period, one in Chicago in September, the other in Wichita, Kan., in March; three Executive Committee meetings were held during the year, two in Chicago and one in Atlantic City; one Advisory Committee-Council meeting was also held in Chicago. The Advisory Committee, made up of various representatives of national, farm, educational, research, and public organizations, came to the meeting primed with suggestions as to the areas of work that might bear fruit in the field of rural health. Similarity of interests on the part of these advisory groups was apparent in several areas: nutrition, hospital facilities, insurance plans, and the possible transference of antibiotics and hormones in food from milk, poultry, and meat animals to humans. The need for greater leadership by state and county medical societies in rural health programs was also expressed by these advisory representatives.

Because of these many opinions a special Study Committee was appointed by the Council to consider the suggestions for a re-activated program of the Council. Two meetings of this special committee were held for the purpose of studying all phases of the Council's work and making recommendations and suggestions for future activities. At the second meeting the Study Committee's report was presented and accepted but because several Council members were not present, definite action was delayed pending study by all Council members and discussion at the next Council meeting. The report as compiled was furnished to the Executive Vice-president's office for submission to the A. M. A. Board of Trustees. Set forth in the Study Committee's report is the statement that it believes that the basic philosophy of the Council should not be changed; it suggests that the program be altered and broadened and the techniques modified to encompass the following activities: (1) closer liaison with the several farm groups; (2) modification and broadening of the national conference; and (3) more frequent and continuing contacts with farm groups at both national and state level, and with state medical associations through field representatives of the Council.

National Conference.—The 14th National Conference on Rural Health was held in Wichita, Kan., March 5-7, 1959, and was attended by approximately 700 representatives of medicine, farm organizations, governmental agencies, and lay groups. This lacked only a few registrants of equaling the all-time high in attendance, despite a sudden blizzard which tied up all traffic for 24 hours. The over-all theme was "Horizons in Rural Health" and the subject of each presentation was pointed toward this theme. Of particular note was the fact that the medical profession was well represented, and the Kansas Medical Society is to be commended on its intense interest in the meeting and its excellent cooperation and participation, not only in the meeting but also in the suggestions for the program. The Council is grateful to the officers and personnel of the state society for their enthusiastic assistance in helping to develop all phases of the conference. There was good representation from national groups as well as lay leaders of rural organizations. The news coverage was excellent and all of the speakers cooperated in radio, television, and personal appearances as well as addressing various clubs, etc. It was believed there were more farm people attending this conference than any of the previous ones.

Activities of Advisory Members.—Mrs. Charles W. Sewell participated in a Senior Medical Student program at the University of Kansas, School of Medicine, Kansas City, Kan.; participated in the 14th National Conference on Rural Health; addressed the Senior-Junior Medical Student Group in Indiana; addressed the Arkansas Rural Health Conference; and participated in five radio broadcasts, three television appearances, and six tape recordings for future National Farm and Home Hour broadcasts. Mrs. Sewell also participated in the Northeast Regional Conference, appearing on the program as well as acting as a consultant.

Miss Gertrude Humphreys represented the Council and participated in the program of the National Home Demonstration Agents Association at its national meeting in Chicago.

Mrs. Mason Lawson, Liaison Member, A. M. A. Woman's Auxiliary, attended the National Conference in Wichita and prepared an excellent summary of the conference for inclusion in the Auxiliary Bulletin.

Resignation of Council Members—Appointment of New Officers.—After 14 years of successfully guiding the activities of the Council on Rural Health, Dr. Crockett tendered his resignation as Chairman at the annual meeting in Atlantic City in June. The Board regretfully accepted his resignation and appointed Dr. F. A. Humphrey of Fort Collins, Colo., as Chairman and Dr. C. S. Mundy of Toledo, Ohio, and Dr. N. H. Gardner of East Hampton, Conn., as Vice-chairmen. Dr. Crockett will remain a member of the Council.

The Council regretfully accepted the resignations of Dr. W. J. Weese at its March meeting and Dr. Willard A. Wright at its June meeting.

In summing up his Council membership for the past nine years, Dr. Wright made this comment:

> "In general there is now a mutual respect between farm organizations and medical organizations, largely accomplished through the efforts of the Council on Rural Health and various committees and others working with them."

The Council on Rural Health is grateful to the Board of Trustees, the House of Delegates, and the management of the American Medical Association and to the constituent medical associations and their staffs for the encouragement, support, and cooperation it has received during the past year.

Staff Activities

The Council office, in addition to regular routine duties, acts as a clearing house of information for various health services of organizations and agencies in rural areas; continues to maintain working relationships with state medical societies and state committees handling rural health matters. In addition, it handles special assignments delegated by the Chairman and members of the Council which included attendance at state rural health meetings, annual meetings of national farm groups, inspection trips to various parts of the country in connection with future sites for national conferences and makes definite arrangements for the national conference after final approval by the Council. This office also keeps current rosters of (*a*) state Rural Health Committees, (*b*) state and National Grange contacts, (*c*) Agricultural Extension Leaders, and (*d*) Farm Magazine Editors; handles the preparation and distribution of pre-conference fliers, conference programs, all details in connection with physical arrangements at the time of the conference; miscellaneous mailings of specialized material of particular interest to farm people; and all details in connection with Council, Executive, Advisory, and special committee meetings.

The annual digest of the 14th National Conference on Rural Health was compiled. Approximately 3,000 copies have been distributed. These were directed to state Rural Health Committee members, executive secretaries of state medical associations, members of both Houses of Congress, leaders of agricultural and educational groups, etc. Approximately 2,000 individual requests for various kinds of materials have been mailed out from this office during this period.

The Council was represented at a conference of the President's Committee on Migratory Labor in St. Louis, sponsored by the Council of State Governments.

The Council was empowered by the Executive Committee to contact several prospective applicants for the position of Field Director.

Several conferences were held with the Executive Vice-president relative to re-activation of the Council's program. Members of the Executive Committee collaborated with the special study committee on a final report to be submitted to the full Council at its next regular meeting.

Pamphlets.—The A. M. A. continues to receive numerous requests for both family health records and personal health information cards from agricultural and educational leaders, and large quantities of these have been furnished for distribution at county, state, and national meetings. These originated in the Council, but in recent months the distribution has been taken over by the Communications Division. The Council staff is complying with many requests to furnish the two health pamphlets, "Check and Know" and "A Member of the Family—Your Doctor."

COUNCIL ON SCIENTIFIC ASSEMBLY

Council Activities

This report includes a summary of the activities of the Council on Scientific Assembly for the year from July 1, 1958, to June 30, 1959.

Council Meetings.—The Council on Scientific Assembly held four stated meetings during the year and conferred with other groups four times. In addition, subcommittees of the Council were active during the period covered by the report.

New Chairman.—Dr. Stanley P. Reimann was elected chairman to replace Dr. Alphonse McMahon. Dr. McMahon served several years with great efficiency, but asked to be relieved of the duties of chairman.

Meetings with Section Secretaries.—The Council met twice with the Section Secretaries, once at an all day meeting in Chicago and once at a dinner meeting in Atlantic City. The increasing enthusiasm and cooperation of the Secretaries for the best possible kind of a program is heartening, and will result in a distinct contribution to graduate medical education.

Meeting with Section Representatives to the Scientific Exhibit.—The Council was host to the Section Representatives at dinner in Atlantic City. This group of Section officers has become more and more active in the Annual Meeting and has made fine contributions to the program.

Meetings with Section Delegates.—Members of the Council were guests of the Section Delegates at breakfast meetings in Minneapolis and Atlantic City. The Council appreciated these opportunities to discuss general policies for Section activities with the Section Delegates.

Publicity for A. M. A. Meetings.—The Council discussed various methods for bringing the two meetings of the Association to the attention of the physicians of the country. It was felt that the situation could be improved by taking advantage of the facilities available.

Date of Annual Meeting.—Future dates for the Annual Meeting will be placed after June 15 each year. There is great difficulty in obtaining desired participants on the program during the first part of June because of interference with school graduations.

Mead Johnson Traveling Exhibit.—Approval was given to Mead Johnson & Company to reproduce selected scientific exhibits on slides for showing in foreign countries.

Purdue Frederick Traveling Exhibits.—Approval was given to The Purdue Frederick Company to arrange for certain scientific exhibits to be shown at meetings of state and county medical societies and other medical groups over the country.

Squibb Awards.—The Council considered an offer from E. R. Squibb & Sons to establish awards of $1,000 each for the best clinical paper read at the Annual as well as the Clinical Meetings. The Council was much impressed with the possibilities of such awards, but because of certain inherent difficulties, felt that the offer should be declined at the present time.

Schering Film Reports.—Approval was given to a request from Schering Corporation to make a film report of the Dallas Clinical Meeting to be shown to the medical profession throughout the country.

Merck Sharp & Dohme Request for Stenotype Coverage.—A request from Merck Sharp & Dohme for stenotype coverage of certain sessions at the Minneapolis Clinical Meeting was relayed to the Council. Inasmuch as the request came to the attention of the Council too late for investigation, action was deferred.

Smith, Kline & French Recognition.—The Council took note of the fact that Smith, Kline & French Laboratories had presented color television programs at the Annual and Clinical Meetings of the American Medical Association for 10 years. In addition to an award presented in the House of Delegates, the Council voted to recognize the anniversary at one of the General Scientific Meetings in Atlantic City.

Liaison Committee, Medical Section, Pharmaceutical Manufacturers Association.—The Liaison Committee of the Medical Section of the Pharmaceutical Manufacturers Association considered 26 suggestions for the improvement of the Annual Meeting. These matters are being studied for implementation. Members of the Liaison Committee are: Dr. W. D. Snively, Mead Johnson & Company, Evansville, Ind.; Dr. Edward Henderson, Schering Corporation, Bloomfield, N. J.; Dr. John Henderson, Johnson & Johnson, New Brunswick, N. J.; Dr. Edwin B. McLean, Cutter Laboratories, Berkeley, Calif.; Dr. Clayton G. Weigand, Lilly Research Laboratories, Indianapolis, Ind.; Dr. Stanton M. Hardy, Lederle Laboratories, Pearl River, N. Y., and Dr. Charles E. Lyght, Merck Sharp & Dohme, Rahway, N. J.

Nomination for Distinguished Service Award.—In accordance with a request from the Board of Trustees, the Council on Scientific Assembly presented a list of seven nominees for the Distinguished Service award. The Board of Trustees submitted three names from this list to the House of Delegates. Dr. Michael E. DeBakey was the final selection by the House of Delegates for this outstanding award. This achievement, by a member of the Council on Scientific Assembly, is an indication of the outstanding caliber of the physicians serving on the councils and committees of the American Medical Association.

Award for Scientific Achievement.—The Council voted to recommend to the Board of Trustees that it consider the establishment of an award for "scientific achievement and its applicability to medicine" in addition to the Distinguished Service award and the Citation of a Layman for Distinguished Service. This matter is under consideration by the Board.

Clinical Laboratory Examinations at Annual Meeting.—A proposition from the *Section on Pathology and Physiology*, whereby blood counts, blood chemistry, urine analysis, and Papanicolaou tests would be made in the Scientific Exhibit at the Atlantic City meeting for physicians requesting such tests was considered and was not accepted. At the Atlantic City meeting, the Section on Pathology and Physiology passed a resolution urging the Council to reconsider the proposition for the Miami Beach meeting.

Trans-Atlantic Conference.—The Council approved a Trans-Atlantic Conference with the British Medical Association for the Clinical Meeting in Dallas. The program will be carried on by two-way telephone conversations between panels in Glasgow and Dallas. Smith, Kline & French Laboratories will sponsor the project.

Society for Investigative Dermatology.—The Council approved a request from the Section on Dermatology, whereby the Society for Investigative Dermatology will hold its meetings in Miami Beach in conjunction with that Section.

Integration of Other Specialty Groups with Sections.—The proposition of integrating specialty groups with respective Sections of the American Medical Association has been approved in principle by the Council. The Association for Research in Ophthalmology has been meeting with the Section on Ophthalmology for some years, on a year to year basis, and the Society for Investigative Dermatology will meet with the Section on Dermatology in Miami Beach in 1960 on a trial basis. In addition, some 34 other organizations contribute to the program of the Annual Meeting to a greater or lesser degree. A recommendation that the American College of Chest Physicians combine its meetings in whole or in part with the Section on Diseases of the Chest emphasized the fact that the whole matter of integration should be studied further with a definite clarification of the issue. The Chairman of the Council appointed a committee to study the problem and report back to the Council.

Inclusion of Color Television with Orthopedic Surgery.—The Secretary of the Section on Orthopedic Surgery, at the request of the Council, discussed the possibility of integrating part of the program of that Section with color television at the Miami Beach meeting. The matter is being studied and the Secretary will report to the Council at the coming Conference of Section Secretaries.

Admission Restrictions to Scientific Activities.—Members of the Council were concerned about the restrictions imposed for admission of physicians only to Convention Hall in Atlantic City on certain mornings during the meeting. This deprived other persons from attending the scientific activities located in the hall during those periods, some of whom should have been admitted. The chairman of the Council appointed a committee to study the problem.

Physicians' Art Exhibit.—The Council recommended that the American Physicians' Art Association be encouraged and that proper space for its exhibit be arranged by the American Medical Association at Annual Meetings.

Allergy Session.—The Council approved a request from the American Academy of Allergy and the American College of Allergists for a Session on Allergy under the Section on Miscellaneous Topics at the Miami Beach Annual Meeting, 1960.

Science Fair.—The Science Fair Committee of the Council attended the National Science Fair in Hartford, Conn., selecting four exhibits for awards. The two top winners brought their exhibits to the Atlantic City Meeting where they were displayed in the Scientific Exhibit. The expense was borne by the Communications Division of the American Medical Association.

Council Committees.—The Chairman of the Council appointed seven committees, composed of Council members, to take care of the following phases of the Council's activities:

Executive Committee
Scientific Exhibit Committee
Motion Picture and Medical Television Committee
Science Fair Committee
Distinguished Service Award Committee
Committee to Study Admission Restrictions at Annual Meeting
Committee to Study Integration Problems with Specialty Groups

Minneapolis Clinical Meeting.—The Council members observed at great length all scientific activities at the Clinical Meeting in Minneapolis, including lectures, color television, Trans-Atlantic Conference, motion pictures, and scientific exhibits. Studies were made concerning features that could be expanded, improved or deleted for the Dallas Clinical Meeting in 1959. Members of the local committee in Dallas were guests of the Council in Minneapolis and conferred with the Council throughout the week.

Atlantic City Annual Meeting.—Meetings of the 21 Sections of the Scientific Assembly were assigned to various members of the Council for observation. Council members not otherwise engaged (in the House of Delegates or with the Board of Trustees) spent practically the entire week in *studying scientific activities and informing themselves* concerning methods for obtaining the best results in the future.

Five Sections passed resolutions at their business meetings some of which will be considered by the Council on Scientific Assembly, and others referred to the proper agencies.

Section on Surgery, General and Abdominal.—A resolution requesting that the name of this Section be shortened to Section on Surgery.

Section on Laryngology, Otology and Rhinology.—A resolution requesting that audiograms be included in the physical examinations of physicians at the Annual Meeting.

Section on Pathology and Physiology.—A resolution urging the Council on Scientific Assembly to continue exploration of the possible establishment of an exhibit in clinical pathology of a practical scope.

Section on Ophthalmology.—A resolution directing the attention of the medical profession to the Glaucoma Identification Card which will make immediately available to all attending physicians information concerning the patient's use of and requirements for miotics and other medications.

Section on Anesthesiology.—A resolution in opposition to a third year of training in anesthesiology. A resolution approving mouth-to-mouth breathing in resuscitation.

Future Plans.—The Council on Scientific Assembly is aware of the evolution taking place in medical meetings of all kinds, and is studying the problem so that meetings of the American Medical Association will be of the greatest possible benefit to the physicians of America. Several factors may be mentioned.

Total attendance at annual and clinical meetings at the present time usually exhausts the capacity of hotels for sleeping rooms in the cities where the meetings are held. An increased total attendance cannot be expected, therefore, unless physicians living in the areas of the meetings attend in greater numbers.

Specialty organizations have increased both in number and in attendance over the years, competing with the Sections of the Scientific Assembly. Studies are being made concerning a joint cooperative effort between some of the specialty groups and the Sections.

Joint meetings of Sections of the Scientific Assembly are increasing in number and the Council is encouraging the trend.

Methods of medical communication are being studied. The popularity of visual methods is bringing about a combination of such methods with the spoken word.

Staff Activities

This report covers activities of the headquarters staff of the Council on Scientific Assembly for the year 1958-1959. In some instances there is duplication with the report of Council activities since the staff attended Council meetings and carried out the directions of the Council.

Council Meetings.—The Council on Scientific Assembly held four stated meetings during the year and conferred with other groups four times. In addition, subcommittees of the Council were active during the period covered by the report. The staff made all arrangements for these meetings, preparing the agenda, arranging for hotel rooms, lunches and dinners, keeping the minutes and carrying out the recommendations of the Council.

Meetings with Section Secretaries.—The Council met twice with the Section Secretaries, once at an all day meeting in Chicago and once at a dinner meeting in Atlantic City. The staff performed the usual functions incidental to the administration of these meetings. Preliminary correspondence and telephone conversations, followed by individual contacts after the meeting, helped to maintain the enthusiasm and cooperation of the Section Secretaries.

Meeting with Section Representatives to the Scientific Exhibit.—The Council was host to the Section Representatives at dinner in Atlantic City. This group of Section Officers has become more and more active in the Annual Meeting and has made distinct contributions to the program. Members of the staff made arrangements for the dinner, and welcomed the opportunity of meeting personally this important group of Section officers who have become more and more active in their contributions of time and effort at the Annual Meeting.

Meetings with Section Delegates.—Members of the Council were guests of the Section Delegates at breakfast meetings in Minneapolis and Atlantic City. A member of the staff attended both meetings, appreciating the opportunity of discussing general policies for Sections with the Section Delegates.

Requests from Pharmaceutical Houses.—Several requests from the following pharmaceutical houses were received at Headquarters and transmitted to the Council for consideration:

Mead Johnson & Company to reproduce selected scientific exhibits on slides for showing in foreign countries.

Purdue Frederick Company to arrange for certain scientific exhibits to be shown at medical meetings over the country.

Schering Corporation to make a film report of the Dallas Clinical Meeting.

Merck Sharp and Dohme to make stenotype reports of the Minneapolis Clinical Meeting.

E. R. Squibb & Sons to establish an award of $1,000 each for the best clinical paper read at the Annual and Clinical meetings.

As much information as possible was secured by the staff about each of these propositions and reported to the Council.

Liaison Committee, Medical Section, Pharmaceutical Manufacturers Association.—Members of the staff conferred with this group on several occasions. The 26 suggestions for the improvement of the Annual Meeting are being studied by the staff.

Nominations for Distinguished Service Award.—The staff secured biographies of nine nominees of the Council for the Distinguished Service Award. The names of the seven nominees finally selected were transmitted to the Board of Trustees with biographies.

Clinical Laboratory Examinations at Annual Meeting.—The Council considered a proposition from the Section on Pathology and Physiology, whereby blood counts, blood chemistry, urine analysis and Papanicolaou tests would be made in the Scientific Exhibit at the Atlantic City meeting for physicians requesting such tests. Members of the staff held several conferences with representatives of the Section on Pathology and Physiology, besides carrying on much correspondence. A legal ruling on the matter was obtained from the Law Department.

Trans-Atlantic Conference.—The Council approved a Trans-Atlantic Conference with the British Medical Association for the Clinical Meeting in Dallas. The program will be carried on by two-way telephone conversations between panels in Glasgow and Dallas. Smith, Kline & French Laboratories will sponsor the project. Members of the staff communicated with officers of the British Medical Association both in London and Glasgow, as well as with representatives of Smith, Kline & French Laboratories in Philadelphia and with the local chairman of the program in Dallas.

Society for Investigative Dermatology.—The Council approved a request from the Section on Dermatology, whereby the Society for Investigative Dermatology will hold its meetings in Miami Beach in conjunction with that Section. Members of the staff communicated with officers of the Society, as well as the Section, and made preliminary arrangements for the 1960 meeting.

Science Fair.—A member of the staff accompanied members of the Council on Scientific Assembly to the National Science Fair in Hartford, Conn., where two high school students were selected to attend the Atlantic City Meeting. The staff assisted the Council and made the necessary arrangements for the exhibits in Atlantic City.

Student A. M. A.—The Secretary of the Council, with a committee appointed for the purpose, studied the scientific exhibits at the meeting of the Student American Medical Association and selected two exhibits for showing at the meeting of the American Medical Association in Atlantic City.

Section Officers.—There were 115 officers of the 21 Sections, with whom contact was maintained throughout the year. A list of the officers with addresses was prepared and widely distributed. Letterheads for most of the officers were printed and sent out. The bulletin, "Information for Section Officers," was revised according to new Bylaws and distributed. Likewise, "Section Rules and Regulations for each Section were revised and distributed as well as "Rules and Regulations of the Scientific Assembly."

Program Copy.—Copy for the official program was assembled and edited by the staff and sent to the printer. Proofs were read and corrected and an index prepared. The Minneapolis program contained 475 names of participants and the Atlantic City program 2,000 names.

Applications for Scientific Exhibit.—Application blanks for space in the Scientific Exhibit at the Annual Meeting were prepared by the staff and sent to Section Secretaries, Section Representatives to the Scientific Exhibit, deans of medical schools and a mailing list of about 1,000 names carefully selected from several thousand previous participants in the Scientific Exhibit. Many individual requests were also filled. As each application was received, it was numbered according to the Section specified. Multiple copies were made of each application which were sent to Section Secretaries, to Section Representatives and to other sources, as necessary, for opinions. After the closing date, Section officers again reviewed the applications and submitted revised lists for acceptance or rejection. On the basis of these opinions copies of the applications were submitted to the three members of the Committee on Scientific Exhibit with recommendations for acceptance or rejection. Members of the Committee studied all applications returning their reports to the staff with notations, agreeing or not agreeing with the recommendations. Three hundred eighty-five exhibits were accepted for the Atlantic City Meeting from about 600 applications. All applicants were notified by the staff concerning acceptance or rejection.

Applications for space in the Scientific Exhibit at the Clinical Meeting followed a somewhat different pattern, since the Sections did not participate. Very few mailings were made of application blanks, except in response to special requests. In a few instances award winners at the previous Annual Meeting were urged to submit applications. Information concerning the acceptability of applicants was obtained as necessary and recommendations passed to the Committee on Scientific Exhibit in the usual manner. One hundred twenty-five applications were received of which 101 were accepted. Each applicant was notified by the staff of the decision of the Committee. Special exhibits brought the total number in Minneapolis to 120.

Floor Plan for Scientific Exhibit.—The floor plan for the Scientific Exhibit at the Annual Meeting was arranged by Sections of the Scientific Assembly, with each exhibitor being assigned space according to his needs. This required much time by the staff, several trial plans being drawn before one was obtained which was acceptable. Although an effort was made to allow 50% of the floor area for aisles, this could not be done at Atlantic City because of posts. The final plan was submitted to the Convention Services Department for copying, after which it was printed. Each exhibitor received a copy, showing the exact location, space number and size of booth.

The floor plan for the Clinical Meeting followed a similar procedure.

Exhibitors Requirements.—The staff mailed a blank to each applicant in the Scientific Exhibit who was accepted requesting information concerning special requirements, such as illumination, power outlets, transparency cases and shelves. The information was assembled and turned over to the Convention Services Department for transmission to the exhibit contractor.

Speakers Requirements.—The staff mailed cards to all speakers on the scientific program requesting information concerning special requirements for speakers. The replies were assembled and turned over to the Convention Services Department.

Committee on Awards.—The Committee on Awards for the Scientific Exhibit consisted of five physicians selected from a panel of 25 names approved by the Council on Scientific Assembly. Service on the Committee on Awards required that members have no other duties on Monday and Tuesday of the week of the meeting, either during the day or the evening.

Members of the staff briefed the Committee on its duties, sat in with it on its deliberations, obtained the services of various consultants as advisors, wrote the final report, and accompanied the members when recipients were notified of awards.

Medals and Certificates.—During the summer and fall of 1958, the six medals awarded in the Scientific Exhibit at the San Francisco Meeting, 1958, were engraved and sent to recipients. Accompanying each medal were certificates, one for each person named on the medals. These, together with certificates of merit and certificates of honorable mention, were engraved and signed by the President of the American Medical Association and by the Secretary of the Council on Scientific Assembly.

Special Exhibits.—The staff secured all supplies and made arrangements for special exhibits.

The special exhibit on fractures shown both at Minneapolis and Atlantic City, required a supply of surgical gowns and trousers, nurses gowns, rubber gloves, sheets, pillows and pillow cases, plaster bandages of various sizes, cast knives, and a long list of miscellaneous supplies necessary for good fracture treatment. All these were checked and sorted by the staff before each meeting and packed in special cases for easy access during the demonstrations. The illustrations for the walls of each booth were checked and packed so that installation was readily accomplished. The pamphlet on fractures for distribution during the meeting was edited and printed by the staff.

The Special Exhibit on Fresh Tissue Pathology at the Atlantic City Meeting used a large number of white laboratory coats, rubber gloves, trays for specimens, three deep freezers and the necessary towels, buckets, and trash cans. The staff made all arrangements, except for the actual collection of specimens.

The Special Exhibit on Pulmonary Function at Atlantic City required the services of the staff in providing space for equipment, together with platforms, speakers' stand, microphone, and chairs supplied by the Convention Services Department.

The Special Exhibit for the Centennial of the Section on Nervous and Mental Diseases was prepared and installed by the staff, with the advice of officers of that Section. Construction of the exhibit was done by the Exhibits Section of the Communications Division.

Physical Examinations Made at the Atlantic City Meeting.—"An Annual P. E. for Every M.D.," required a large amount of preparation by the staff. The location of this feature was especially difficult because of the sensitivity of electrocardiogram instruments to outside influences. Cots were furnished, with tables for ten instruments and all necessary arrangements for technicians, clerks and consultants. Chest x-rays, on the other hand, required space close to a high powered electric source. The lead wall for the x-ray room is owned by the Association and carried to the meeting. Several conferences were held by the staff with representatives of the General Electric Company, X-ray Department, in preparation for this feature. Careful attention was given to space needs and traffic flow to accommodate the many hundreds of physicians who took advantage of the opportunity for physical examinations.

Question and Answer Conferences.—Arrangements were made at the Atlantic City Meeting for two question and answer conferences. One was on diet in cooperation with the Council on Foods and Nutrition of the American Medical Association and the other on diabetes in cooperation with the American Diabetes Association, under the chairmanship of Dr. Howard F. Root, Boston. The conferences were conducted continuously throughout the week. The staff made all necessary arrangements for each of these conferences.

Hotel Accommodations.—All participants on the program, at both Annual and Clinical Meetings, were sent hotel accommodation blanks marked "Scientific Assembly." The Convention Bureau in each instance was alerted to watch for these forms, and assign rooms as nearly as possible in accordance with the applicant's wishes. In addition, reservations in hotels were made for demonstrators in the fracture exhibit, special exhibit committees, and Section officers, through the Convention Services Department.

Medical Students.—Arrangements were made with the Convention Services Department for a group of medical students to assist with the details of the Scientific Exhibit at the Annual Meeting, and to serve as ushers in the meeting rooms.

Council Office at Meeting.—At the Annual and Clinical Meetings the Council on Scientific Assembly maintained an office in the Scientific Exhibit, from which the staff administered all scientific activities. The Secretary of the Council also acted as director of the Scientific Exhibit with a desk easily available to all scientific exhibitors and visitors alike.

At the Clinical Meeting in Minneapolis, the Staff was divided for the first time, with demonstrators' badges for the Scientific Exhibit being distributed in the General Registration area. This required a somewhat larger force than previously, when all administrative activities were carried on in one place.

Section Papers and Minutes.—Section papers and minutes of the Section business meetings were delivered to the staff at Atlantic City by each Section Secretary. The papers, with approval slips, were turned over to the Editor of The Journal. The minutes of the Sections were assembled and prepared for publication in The Journal.

Deadlines.—The staff arranged a series of deadlines for various activities during the year.

Aug. 1. Applications closed for space in the Scientific Exhibit at the Minneapolis Meeting.
Sept. 1. Program copy for the Minneapolis Meeting was due.
Sept. 15. Preliminary program submitted for Convention Number of The Journal.
Sept. 25. Applicants for space in Scientific Exhibit notified of decision of Committee.
Oct. 15. Meeting with Section Secretaries, when preliminary plans for Atlantic City were announced.
Nov. 21. All material for shipment to Minneapolis to be ready.
June 5. Deadline for assembling material for shipment to Atlantic City.

Minneapolis Clinical Meeting.—The Minneapolis Clinical Meeting was eminently successful from a scientific standpoint. All activities were well attended, and there was a general feeling of enthusiasm throughout the week. There were 224 presentations of all types—lectures, panels, symposiums, motion pictures, color television, breakfast conferences, scientific exhibits, and special demonstrations. The total participants numbered 519 of which 35 were on the program two or more times. Only 30% of the participants came from the Minneapolis-St. Paul area.

There were four meeting rooms with programs in progress simultaneously, morning and afternoon. Lectures were presented in one room, panel discussions in another and color television in the third room. Symposiums were presented in the fourth room each morning and motion pictures each afternoon. At the same time, demonstrations in the Scientific Exhibit were conducted continuously in 120 exhibits.

Many features of the meeting were worthy of mention. The ten breakfast conferences, presented at a Clinical Meeting for the first time, were sufficiently well attended to deserve repetition. The Trans-Atlantic Conference, with the British Medical Association, was a distinct success, with a clinical pathological conference on chest disease. Panels in Southampton and in Minneapolis discussed the subject to capacity audiences in both places. Spectacular exhibits on the history of medicine in the Minnesota area were arranged by Dr. Thomas A. Peppard, Minneapolis, and attracted much attention. Demonstrations on the problems of delivery, under the auspices of Dr. Mancel T. Mitchell, Minneapolis, were presented eight times during the week. The special exhibit on fractures, presented by a committee headed by Dr. Ralph G. Carothers, Cincinnati, as chairman, attracted the usual large audience.

A diversified program, such as was presented in Minneapolis, is of necessity the product of various individuals with specialized experiences. The staff wishes to express appreciation to members of the local committee, especially to Dr. O. L. Norman Nelson, General Chairman, who kept the whole program moving; to Dr. N. L. Gault Jr., who produced an outstanding program that taxed the capacity of the meeting halls most of the time; to Dr. James R. Fox, for the color television program and the Trans-Atlantic conference; and to Mr. Thomas P. Cook, Executive Secretary of the Hennepin County Medical Society, Minneapolis, for his continued assistance with the many details incidental to the planning of the program.

Annual Meeting–Atlantic City.—Meetings in Atlantic City are always well attended, and the one in 1959 attracted a large number of physicians. The headquarters for scientific activities was the commodious Convention Hall, but some of the Section meetings were held in nearby hotels along the boardwalk and easily reached. Attendance at most Section meetings was satisfactory.

The General Scientific Meetings on Monday afternoon and Tuesday morning, devoted to diseases of the blood, were especially popular. The 21 Sections of the Scientific Assembly held 56 meetings, nine of which were joint sessions—in most cases two or three Sections meeting together. In one instance six Sections conducted a joint symposium on hepatic diseases and at another time seven Sections presented a joint symposium on childbirth. Both of these features attracted large audiences and laid the pattern for similar activities in the future. The Section on Military Medicine experimented with a program that combined various audiovisual features with the lecture program. There were 276 individual lectures, 19 panel discussions, and 14 symposiums presented by the Sections.

Centennial ceremonies were conducted by seven Sections: Experimental Medicine and Therapeutics, Internal Medicine, Nervous and Mental Diseases, Obstetrics and Gynecology, Pathology and Physiology, Preventive Medicine and Surgery. Guest speakers included Mr. Andrew Claye, Leeds, England, President of the Royal College of Obstetricians and Gynecologists, Dr. J. N. Morris, London Hospital Research Laboratories, and Dr. R. R. Coombs, Department of Pathology, University of Cambridge, Cambridge, England.

Color television programs were presented each morning and afternoon throughout the week. A feature was the repetition of a surgical clinic by Dr. I. S. Ravdin presented at the first color television program ten years previously. Appreciation is extended to Atlantic City Hospital for its cooperation and to Smith, Kline & French Laboratories, Philadelphia, for sponsoring the program.

Motion pictures were shown continuously throughout the week, covering all phases of medicine. In many instances, there was a discussion of the film by the author, which added interest for appreciative audiences. A special feature was an evening program on hospital sepsis with discussions of the motion picture by outstanding authorities.

The Scientific Exhibit included 385 exhibits of which 352 were shown under Section auspices. The special exhibits conducted by Sections were especially attractive. Pulmonary function was presented by the Section on Diseases of the Chest and fresh tissue pathology by the Section on Pathology and Physiology.

Physical examinations of physicians attending the meeting were conducted by the Section on General Practice with the assistance of cardiologists and radiologists. The National Tuberculosis Association made 802 chest x-rays of which 18% showed some abnormality. More than 1,000 electrocardiograms were taken, of which 22% of the cases were abnormal.

Other features included the special exhibit on fractures, which was as popular as ever. The question and answer conference on diabetes was conducted continuously, with no time out for lunch, to an ever present, interested audience. In addition, there was a question and answer conference on diet and an exhibit symposium on arthritis and rheumatism, both of which were highly successful.

Awards in the Scientific Exhibit included 6 medals, 23 certificates of merit, 25 honorable mention certificates and 2 certificates of appreciation. In addition, awards were made for medical illustration and medical photography. The Section on Urology presented the John H. Morrissey Award and the Section on Ophthalmology an award of $250 to the best exhibit in the respective Sections.

Total participants in the scientific program numbered about 2,000, coming from 43 states and the District of Columbia, as well as from 14 foreign countries.

The staff appreciated the cooperation and unstinted contribution of time and effort on the part of Section officers, various special committees and numerous participants in the program at Atlantic City. Their patience and cordiality, often under trying circumstances, made the problem of administering the meeting infinitely easier.

Cooperation with A. M. A. Divisions.—Cooperation was maintained constantly with the various departments of the Association throughout the year in matters pertaining to the scientific program at the Annual and Clinical Meetings.

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Convention Services Department.—The staff cooperated with the Convention Services Department relative to all services incidental to the smooth operation of the scientific program at both meetings, which included technical arrangements for meeting rooms as well as the Scientific Exhibit; arrangements for hotel accommodations for Section officers, special demonstrators in the Scientific Exhibit and program participants, Council members and staff; transportation of staff to the meetings, as well as shipment of all ipment; employment of personnel to serve as ushers in meeting rooms, patients in the Scientific Exhibit, as well office assistants, messengers, and many other details involved in running the meeting.

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Scientific Activities Division.—The staff continued to avail itself of the services of the various councils and committees under this division. Confidential opinions were received on certain applicants for space in the Scientific Exhibit at both the Annual and Clinical Meeting. Various members of these councils were asked to check over the Scientific Exhibits at the meetings. The Bureau of Investigation checked all applications for space in the Scientific Exhibit to make certain that none appeared in their files. These services were much appreciated by the Council staff.

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Attendance at Other Meetings.—During the year the Secretary of the Council attended various meetings over the country, participating on some of the programs. He read papers at the meeting of the Northwest Conference on Diseases Transmitted by Animals, in Hamilton, Montana, and at the meeting of the Medical Writers Association in Chicago. He conferred with the Committee on Section Work of the Southern Medical Association in New Orleans, and served on the Committee on Awards of the American Academy of Ophthalmology and Otolaryngology in Chicago. He participated in panel discussions at the meeting of the Association of Medical Illustrators in Dallas and the meeting of Professional Convention Managers Association at Bal Harbour, Fla. Other meetings included the Academy of General Practice in San Francisco, the American Public Health Association in St. Louis, and the American Academy of Orthopedic Surgery in Chicago.

COMMITTEE ON COSMETICS

Committee Activities

The Committee on Cosmetics continued to function in an educational and liaison capacity between the medical profession, the cosmetic industry and the public in a rapidly expanding area with broadening medical implications. In 1958, well over 2 billion dollars were spent by the American public on cosmetics and allied preparations which represent the products that come within the direct purview of the Committee on Cosmetics. More significant than increasing volume alone is the trend toward the incorporation of drugs into products merchandized as cosmetics and accepted and used by the public as such. The concept of a cosmetic as a product containing only physiologically inert ingredients is becoming more historical than real. In spite of the changing character of these products there are no legal requirements for the pre-testing of new cosmetics. However, concern for public health is reflected in the introduction into the 86th Congress of two bills whose purpose is to provide for the safety of chemicals in cosmetics. A second trend of growing concern to the Committee is the increased amount of misinformation on the basic physiology of the skin and the cutaneous effects of cosmetic chemicals directed to the public through mass media advertising.

Educational Activities.—The symposium reports, exhibits, and pamphlets which the Committee sponsors are intended primarily to serve in the continuing education of the physician. Although the medical profession is the major target, experience has shown that scientists in areas allied to medicine and those in industry have been enlightened and stimulated by the Committee's educational activities. The public has been reached through widespread mass media publicity of published material and through articles published in *Today's Health.*

Symposiums.—The American Association for the Advancement of Science has published in monograph form the third symposium of the Committee on Cosmetics which was presented before the Medical Sciences Section of that Association. This monograph "The Human Integument" is edited by Dr. Stephen Rothman, Chairman of the Committee. The 12 papers in the monograph represent a Committee endeavor to call attention to the impact of the basic biological sciences on the progress of medical science. It is intended to show that research in cutaneous physiology and its application to clinical dermatology has produced new ideas and knowledge which will improve patient care. The papers evolve about four major issues: (1) the protective function of the skin, (2) circulation and vascular reactions, (3) sebaceous gland secretion, and (4) pathogenic factors in premalignant conditions and malignancies of the skin.

The fourth symposium of the Committee was held during the Annual Meeting of the A. M. A. in Atlantic City, June 9, 1959. This symposium "The Management of Cutaneous Facial Disfigurement" was planned to promote one of the Committee's major objectives; namely, to alert the medical profession to the severe psychological implications of conditions characterized by temporary or permanent skin disfigurement.

A summary of the symposium papers was published in The Journal (170:1194 [July 4] 1959) and the complete papers will appear in The Journal in the near future as *reports to the Committee.*

The fifth symposium of the Committee will be presented at the Clinical Meeting of the A. M. A. in Dallas on Dec. 2, 1959. The program "Sunlight and the Skin" was selected because of the significance of cutaneous exposure to solar radiation in this geographical area. Drs. Stephen Rothman and Raymond R. Suskind will serve as co-chairmen. The program will include the following papers: The Physical Factors in Sun Exposures, The Physiological and Pathological Changes in Sunburning and Suntanning, The Pathogenesis of Solar Hypersensitivity, Cutaneous Diseases Provoked or Aggravated by Sunlight, The Sunlight Factor in Aging and Skin Cancer, The Medical and Cosmetic Uses of Solar Radiation and U.V.L., The Prevention and Management of Harmful Effects Induced by Sunlight—Physical and Chemical Sunscreens and The Use and Abuse of the Psoralens. Speakers will include: Drs. Farrington Daniels, Jr., Allan L. Lorincz. James B. Howell, John M. Knox and Samuel Wm. Becker, Jr., Harold Blum, R. L. Baer, Kenneth Burdick.

Exhibits.—The Committee in cooperation with the Communications Division has under construction a new exhibit "Sunlight and the Skin," which is intended for professional audiences and will cover such phases of the problem as the effects of chronic and acute exposures and the pathogenesis of ultraviolet rays. This new exhibit will be shown for the first time at the Clinical Meeting in Dallas in December. The Committee also has under consideration at the present time a second exhibit which will concern dermatitis caused by various types of cosmetics.

Pamphlets.—Two pamphlets are being prepared to supplement the exhibit "Sunlight and the Skin." The first is a composite of two reports already published by the Committee on the medical significance of solar radiation. The second pamphlet, written for the public, will be provided to viewing physicians for distribution in their offices. This pamphlet will include instructions on a safe way to achieve skin tanning with special emphasis on the consequences of overexposure to the skin's health and appearance.

Reports.—The Committee communicates to the medical profession at large through its reports published in The Journal. These are frequently written by individual Committee members on topics which are particularly timely and significant. Two such reports have been published recently. They are: "Suntanning—Potentiation with Oral Medication" and "Inclusion of Antibiotics in Cosmetic Preparations." Two reports on hirsutism are awaiting publication; namely, "The Diagnosis and Management of Hirsutism" and "Electrolytic Methods in the Management of Hirsutism." Nearing completion are a Committee statement on the use of drugs in cosmetics and a status report on the safety of aerosol hair lacquer sprays. Reports to the Committee under consideration at the present time are eight papers presented at the Committee's most recent symposium "The Management of Cutaneous Facial Disfigurement." The Committee has, during the past year, given permission to the editor of *Boletin de la Sociedad Cubana de Dermatologia* to publish all of its reports in this professional journal.

Liaison Activities.—Individual Committee members have demonstrated their interest in increased cooperation with the toilet goods industry toward the mutual goal of providing the public with safe and effective products. They have actively participated in and assisted with the programs for meetings and seminars sponsored by industry scientists. As participants, Committee members have stressed the importance of the basic sciences in the research and development of effective, safe cosmetics. In recognition of their contributions, this year the Society of Cosmetic Chemists has for the second time honored a member of the Committee with its special $1,000 award. Four such awards have been made by the Society. Of these, two recipients have been members of the Committee on Cosmetics. Both Dr. Irvin H. Blank, this year's recipient, and Dr. Stephen Rothman, the first award winner in 1955, were honored for their research in the biochemistry and physiology of the skin. Individual members also promote Committee objectives through their activities in such professional and scientific organizations as the Society for Investigative Dermatology, the American Pharmaceutical Association, the American Academy of Dermatology and Syphilology and the Academy of Allergy. Individual members serve in an advisory capacity to the Better Business Bureau and have most recently assisted tha group in an evaluation of home electrolysis machines. They are now cooperating with the Bureau of Medicine of th Food and Drug Administration in a study of the problem associated with the use of antiperspirants.

Staff Activities

The staff of the Committee on Cosmetics consists of its Secretary, Veronica L. Conley, Ph.D., a research assistant and a clerical staff of two.

The Secretary is responsible for the administration of the Committee's program which includes the accumulation, preparation, and dissemination of its educational material and for the direction of the Committee's investigational and service activities.

Investigational Activities: Surveys.—The Secretary this year concluded a two-year study of resistance to inaccurate advertising claims among nurses, physicians' wives, *Today's Health* readers and average women. The Secretary was responsible for the development and pre-testing of the questionnaire, the preparation of the returned questionnaires for IBM tabulations and the interpretation and analysis of the findings. The results of this study will be published soon as a Report to the Committee. The purpose of this study was to obtain some measure of the success of health education efforts in regard to the safety and effectiveness of cosmetic hormone creams among health oriented groups as compared with average women.

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A summary of the symposium papers was published in THE JOURNAL (170:1194 [July 4] 1959) and the complete papers will appear in THE JOURNAL in the near future as reports to the Committee.

The fifth symposium of the Committee will be presented at the Clinical Meeting of the A. M. A. in Dallas on Dec. 2, 1959. The program "Sunlight and the Skin" was selected because of the significance of cutaneous exposure to solar radiation in this geographical area. Drs. Stephen Rothman and Raymond R. Suskind will serve as co-chairmen. The program will include the following papers: The Physical Factors in Sun Exposures, The Physiological and Pathological Changes in Sunburning and Suntanning, The Pathogenesis of Solar Hypersensitivity, Cutaneous Diseases Provoked or Aggravated by Sunlight, The Sunlight Factor in Aging and Skin Cancer, The Medical and Cosmetic Uses of Solar Radiation and U.V.L., The Prevention and Management of Harmful Effects Induced by Sunlight—Physical and Chemical Sunscreens and The Use and Abuse of the Psoralens. Speakers will include: Drs. Farrington Daniels, Jr., Allan L. Lorincz, James B. Howell, John M. Knox and Samuel Wm. Becker, Jr., Harold Blum, R. L. Baer, Kenneth Burdick.

Exhibits.—The Committee in cooperation with the Communications Division has under construction a new exhibit "Sunlight and the Skin," which is intended for professional audiences and will cover such phases of the problem as the effects of chronic and acute exposures and the pathogenesis of ultraviolet rays. This new exhibit will be shown for the first time at the Clinical Meeting in Dallas in December. The Committee also has under consideration at the present time a second exhibit which will concern dermatitis caused by various types of cosmetics.

Pamphlets.—Two pamphlets are being prepared to supplement the exhibit "Sunlight and the Skin." The first is a composite of two reports already published by the Committee on the medical significance of solar radiation. The second pamphlet, written for the public, will be provided to viewing physicians for distribution in their offices. This pamphlet will include instructions on a safe way to achieve skin tanning with special emphasis on the consequences of overexposure to the skin's health and appearance.

Reports.—The Committee communicates to the medical profession at large through its reports published in THE JOURNAL. These are frequently written by individual Committee members on topics which are particularly timely and significant. Two such reports have been published recently. They are. "Suntanning—Potentiation with Oral Medication" and "Inclusion of Antibiotics in Cosmetic Preparations." Two reports on hirsutism are awaiting publication; namely, "The Diagnosis and Management of Hirsutism" and "Electrolytic Methods in the Management of Hirsutism." Nearing completion are a Committee statement on the use of drugs in cosmetics and a status report on the safety of aerosol hair lacquer sprays. Reports to the Committee under consideration at the present time are eight papers presented at the Committee's most recent symposium "The Management of Cutaneous Facial Disfigurement." The Committee has, during the past year, given permission to the editor of *Boletin de la Sociedad Cubana de Dermatologia* to publish all of its reports in this professional journal.

Liaison Activities.—Individual Committee members have demonstrated their interest in increased cooperation with the toilet goods industry toward the mutual goal of providing the public with safe and effective products. They have actively participated in and assisted with the programs for meetings and seminars sponsored by industry scientists. As participants, Committee members have stressed the importance of the basic sciences in the research and development of effective, safe cosmetics. In recognition of their contributions, this year the Society of Cosmetic Chemists has for the second time honored a member of the Committee with its special $1,000 award. Four such awards have been made by the Society. Of these, two recipients have been members of the Committee on Cosmetics. Both Dr. Irvin H. Blank, this year's recipient, and Dr. Stephen Rothman, the first award winner in 1955, were honored for their research in the biochemistry and physiology of the skin. Individual members also promote Committee objectives through their activities in such professional and scientific organizations as the Society for Investigative Dermatology, the American Pharmaceutical Association, the American Academy of Dermatology and Syphilology and the Academy of Allergy. Individual members serve in an advisory capacity to the Better Business Bureau and have most recently assisted that group in an evaluation of home electrolysis machines. They are now cooperating with the Bureau of Medicine of the Food and Drug Administration in a study of the problems associated with the use of antiperspirants.

Staff Activities

The staff of the Committee on Cosmetics consists of its Secretary, Veronica L. Conley, Ph.D., a research assistant and a clerical staff of two.

The Secretary is responsible for the administration of the Committee's program which includes the accumulation, preparation, and dissemination of its educational material and for the direction of the Committee's investigational and service activities.

Investigational Activities: Surveys.—The Secretary this year concluded a two-year study of resistance to inaccurate advertising claims among nurses, physicians' wives, *Today's Health* readers and average women. The Secretary was responsible for the development and pre-testing of the questionnaire, the preparation of the returned questionnaires for IBM tabulations and the interpretation and analysis of the findings. The results of this study will be published soon as a Report to the Committee. The purpose of this study was to obtain some measure of the success of health education efforts in regard to the safety and effectiveness of cosmetic hormone creams among health oriented groups as compared with average women.

The Secretary completed a survey of all inquiries received over a period of the past seven years with classifications according to source and subject. This was done to determine what subjects are of greatest interest to the profession and the public.

Library Research.—The Committee operates in a sphere of activity where no single comprehensive literature exists. Consequently, data pertinent to skin function and care with emphasis on the role of cosmetics or allied products must be accumulated from a number of medical, scientific and trade sources. For the purpose of keeping a comprehensive and current file of information, 300 journals are checked regularly. Abstracts, reprints, and references are accumulated and a readily accessible file is available for the staff and Committee members. The reference files had grown in a 10-year period to an unmanageable size. Therefore, during the past year, the files were thoroughly studied with a view to removing all extraneous and outdated information. All material was reclassified into specific sections which experience has shown would render the files most accessible and useful.

The information in these files is used regularly as a basis for Committee statements, for replies to the Question and Answer Section of The Journal, and for the advisory service provided to such groups as the Bureau of Health Education, the A. M. A. Library, and the Better Business Bureau.

Educational Activities: Today's Health Articles.—The Secretary has during the past year written three articles for *Today's Health.* These represent the final articles in a seven-year monthly series of educational pieces on skin health and appearance. Reprints of the 90 articles have been bound in loose leaf form.

Committee Reports.—The Secretary is responsible for writing educational material published as reports to the Committee. These reports are then reproduced in the Committee Bulletin and must be unanimously accepted before they may be published. A report on the use of electrolytic methods for the permanent correction of hirsutism is awaiting publication. The Secretary is now writing a statement on the use of drugs in cosmetics and a status report on the safety of aerosol hair sprays.

A summary of the papers of the recent symposium of the Committee "The Management of Cutaneous Facial Disfigurement" presented at the Annual Meeting in Atlantic City was prepared for publication. It appeared in the Organization Section of the July 4th issue of The Journal.

Introductory Statements.—The Secretary wrote the introduction to the monograph "The Human Integument" a symposium sponsored by the Committee on Cosmetics and published recently by the American Association for the Advancement of Science. The introduction focuses on the purpose of the symposium; namely, to help the physician maintain close contact with developments in the basic biological sciences which have an ever increasing impact on the progress of medical sciences.

Introductory statements are written to precede all reports published in The Journal. In these preliminary remarks, the important issues in the subsequent report are emphasized as well as the Committee's purpose in authorizing publication.

Editorials.—The Secretary wrote an editorial entitled "Suntanning" to accompany the Committee Report "Suntanning—Potentiation with Oral Medication." An editorial is prepared for publication at the same time as a report whenever the Committee is of the opinion that the issues in the report warrant special attention.

Exhibits.—The Secretary is preparing the format of the exhibit "Sunlight and the Skin" which will be presented for the first time at the Dallas meeting.

Pamphlets.—Two pamphlets to accompany the foregoing exhibit "Sunlight and the Skin" are under preparation. The first pamphlet will be a supplement to the exhibit and is directed to the medical profession.

The second pamphlet is written for the public and will be presented to physician viewers for distribution to their patients.

Service Activities.—The Secretary has completed five years of service as a member of the Editorial Board of *The Journal of the Society of Cosmetic Chemists.* During the past year she served as a member of a joint committee of the National Education Association and the A. M. A. in the preparation of a booklet "As Others See Us." The Secretary regularly serves in a consultant capacity to the National Better Business Bureau and its local branches, to various state and medical societies, and to radio and television stations, newspapers, and magazines regarding the acceptability of advertisements. Advice on the scientific soundness and timeliness of material is given to physician writers and free lance writers. Reference material is often provided to advertising agency research departments, librarians in the pharmaceutical and cosmetic industries, and writers. The Secretary serves in a consultant capacity to the A. M. A.'s Bureau of Health Education, Question and Answer Department of The Journal, the Department of Investigation, the Council on Scientific Assembly, and the Advertising Committee.

The Secretary maintains close contact with the Toilet Goods Association and participates in a frequent exchange of information with that group. Meetings of this Association, closed to all but industry members, are attended by the Secretary as an invited guest. The Secretary is also regularly invited to meetings of the American Academy of Dermatology and the Society for Investigative Dermatology.

COMMITTEE ON MEDICOLEGAL PROBLEMS

Committee Activities

This report covers the activities of the Committee during the period July 1, 1958, through June 30, 1959. During this period, two meetings were held; Dr. Herman Heise was elected chairman to succeed Dr. Alan Moritz, who resigned from the Committee, Dr. Russell Fisher was appointed to the Committee to replace Dr. Moritz, and Mr. George E. Hall of the Law Division staff was designated as Executive Secretary.

Forensic Pathology.—One of the principal activities of the Committee relates to the improvement of the caliber of medicolegal investigations throughout the country. Hoping to further this objective, the Committee worked with the Law Division in the preparation and shooting of a medicolegal film entitled "A Matter of Fact." The film, shown for the first time at the American Bar Association meeting in Miami Beach, Florida, in August, 1959, demonstrates clearly and emphatically how a medicolegal autopsy performed by a trained forensic pathologist can improve the administration of justice. In the example given, a medical examiner was able to establish the innocence of a young man who, on the basis of a coroner's investigation, would probably have been found guilty of the murder of his wife.

Chemical Tests for Intoxication.—The manual on Chemical Tests for Intoxication is nearing completion with but the finishing touches on one chapter yet remaining. In the meantime, a number of the scientific chapters of the manual have been published in The Journal. The number of requests for reprints of these chapters indicates that the manual will be a popular one.

Many toxicologists have suggested that, according to scientific evidence, the upper limit of prima facie intoxication should be lowered from 0.15% to 0.10%. This recommendation will be studied during the coming year.

So far as highway safety in general is concerned, the Committee discussed the point system now being used in some states with respect to traffic violations. The system consists of a series of demerits against the violator which may eventually result in suspension of his license. The Committee voted to express its approval of the point system to the Committee on Medical Aspects of Automobile Injuries and Deaths.

Professional Liability.—The Committee is in the process of trying to develop a system for studying certain hazardous fields of practice and making recommendations to the practicing physician concerning his activities in such fields. Included are: the use of tetanus prophylaxis, the use of X-ray in periodic examinations and the promiscuous use of antibiotics. In addition to this study, the Committee is desirous of collecting all the information it can about the misuse of expert medical testimony in court. It urges physicians encountering this problem to report the situation to the Committee Secretary at the headquarters office.

Medicolegal Education.—A survey of the medical schools to determine the extent to which medicolegal courses are being given to medical students has been completed.

The Committee is in the process of working out a program of postgraduate medicolegal education which may be adapted to the needs of local medical societies throughout the country.

Blood Grouping Tests and Blood Transfusions.—An effort is being made to determine standards which may be used by those attempting to locate an expert in the field of blood grouping. The Committee feels that any list of laboratories purporting to be able to perform blood grouping tests should be carefully scrutinized so that attorneys needing such specialists will not be misled.

A member of the Committee attended a meeting with the Council on Professional Practices Committee of the AHA and assisted in the development of guides to be used when a patient's religion prohibits the transfusion of blood.

Retention of Body Tissue.—It was called to the attention of the Committee that the office of the coroner in Los Angeles was having trouble because the legal counsel of the Board of Supervisors was enforcing a ruling that it is improper to retain any tissues from the bodies of the dead for more than three days. In the opinion of the Committee this is incompatible with the practice of pathology. The Committee adopted a resolution recommending that the Board of Trustees of the American Medical Association communicate with the appropriate authorities in Los Angeles emphasizing the impossibility of doing adequate chemical studies without the indefinite retention of tissues and fluids to detect the causes of industrial, accidental, and suicidal deaths.

COMMITTEE ON PESTICIDES

Committee Activities

This is the 10th annual report of the Committee on Pesticides. The following is a résumé of its more important activities and accomplishments during the past year.

Educational Activities.—The series of Committee reports has been extended to 25 with the publication of a report on "Morbidity and Mortality from Economic Poisons in the United States." This report is based on an analysis of 37,000 incidents of poisoning reported by poison control centers, industrial commissions, and state departments of health for a two-year period.

A review of the health hazards of dieldrin to public health workers engaged in disease vector control has been finalized and is being readied for publication. Several hundred cases of poisoning from various parts of the world were evaluated in the light of pharmacologic and toxicologic data available on this chlorinated hydrocarbon insecticide. The first report of a case of accidental ingestion of this material was just received from Israel and is being edited for publication as a clinical note to accompany the review in the committee's section in The Journal.

The Committee has been invited to participate in organizing a symposium on Accidental Poisoning at the next Annual American Medical Association Meeting. The program is to include "question and answer" type of presentations including those related to farm safety and the hazards of pesticides around the home.

Service Activities.—The Committee on Pesticides collaborated with other groups and organizations during the past year. The United States Public Health Service requested the Committee to participate in the revision of its booklet entitled "Clinical Memoranda on Economic Poisons." In this connection, case histories and pharmacological data are presently being compiled on endrin, phosdrin, and D. D. V. P. which are newly introduced economic poisons.

The Committee continues to cooperate with the American Standards Association in the selection of generic names for pesticides. During the past year, coined common names for several new pesticidal chemicals were considered and recommendations made on names proposed by the International Standards Association for items entering foreign commerce.

A proposal to form a new council was considered. The recommendations of the Council on Drugs which stated that the work of the Committee on Pesticides could be strengthened by combining it with the Committee on Toxicology to form a Council to study toxicology and other environmental health problems were reviewed and a special subcommittee was appointed to deal with technical problems involving amalgamation and council status.

The Committee in cooperation with the National Agricultural Chemicals Association announced the availability of a 64 page booklet "Open Door to Plenty" in March, 1959 in The Journal and the *AMA News*. The booklet is designed to tell the story of how pesticides are used to protect food, property and health. An average of 100 requests a week has been received from physicians and over 14,000 copies have been distributed through all sources to date.

Staff Activities

The staff of the Committee on Pesticides was engaged in the following activities during the past year:

Educational Activities: Publications.—The following reports were prepared for publication "Morbidity and Mortality from Economic Poisons in the United States" (*Arch. Ind. Health* 18:126 [Aug.] 1958) and "Studies on Chemical Protection Against Lethal Action of Parathion" (*Arch. Inter. de Pharm. et de Therapie* 116:375 [Sept.] 1958).

Three confidential bulletins comprising over 100 pages of transactions of Committee business were prepared by the office staff for circulation among the members of the Committee on Pesticides. A fourth bulletin has been prepared for mailing to the membership. Among the topics submitted for discussion are: adipose tissue storage of DDT; hazards of pesticide spraying programs; proposed amendment to the Federal Pesticide Act; suspected pesticide fatality. A report was also presented on the Kerala (India) food poisoning episode in which 106 deaths and 400 nonfatal injuries were attributed to parathion contaminated flour.

Reprints.—The Committee on Pesticides in cooperation with the National Agricultural Chemicals Association announced the availability of a 64-page booklet entitled "Open Door to Plenty" in recent issues of The Journal of the American Medical Association and the *AMA News*. The booklet is designed to tell the story of how pesticides are used to protect food, property, and health. An average of 100 requests a week have been received from physicians and over 14,000 copies have been distributed through all sources to date.

Since the publication of the Committee report "Morbidity and Mortality from Economic Poisons in the United States" over 4,000 reprints have been distributed. An additional 1,000 reprints have been ordered to meet current and anticipated requests for this publication.

Reprints of Committee reports and other staff publications have been bound in loose-leaf form for sale, at cost, to interested persons and for free distribution to medical school libraries. Twenty-five Committee-sponsored reviews which appeared in American Medical Association publications and 18 additional reports published in other scientific periodicals were bound in this form.

Information Services.—A new project was initiated to extend the Committee's information services and is directed towards the preparation of 5"×8" pesticide poisoning information cards. One hundred information cards have been prepared. These provide basic information in concise form on chemicals found in pesticide products. Data furnished on these cards include the common and chemical name of the poisonous ingredients; trade name; type of product (formulation in which the chemical is used); physical and chemical properties and uses; principal hazards and toxicity rating; symptoms and treatment of poisoning; and the present status of its use in agricultural and home environment. These cards are to be made available for use by poison control centers and for pharmacology departments and other teaching staffs in medical schools, pharmacy schools, and colleges of agriculture.

In the same connection, the Committee staff assisted in the preparation of a lecture series on problems arising from the use of drugs and chemicals in agriculture by a former Committee member currently lecturing at Cornell University. The series consists of lectures on the use of estrogenic substances in clinical medicine, in animal and poultry production and residues in meat and plant products; feed and food residues from arsenicals in animals and plant products; antibiotic residues in milk and animal products; veterinary clinical problems in the use of antibiotics; pharmacologic effects in tranquilizers and miscellaneous drugs in domestic animals; and problems in the use of coccidiostats and anthelmintics. The foregoing subjects represent a new field of interest for Committee activity and broadening the base of our information services in these areas is now being studied.

The Committee has been asked by the ad hoc committee on clinical toxicology, which is revising the "Standard Nomenclature of Diseases and Operations," to review a draft of the section concerned with the classification of economic poisons. A provisional list of 212 pesticidal chemicals was reviewed in connection with the forthcoming edition of this publication.

The Florida Department of Agriculture has requested the Committee's review of the dangers involved in the unlimited registration of a household pesticide containing 1% parathion, a highly toxic insecticide ordinarily restricted to use in agriculture. The Committee was unanimous in its condemnation of the proposed registration and provided information and comments concerning the dangers involved.

The need for study of other toxicology problems in agriculture was brought to the attention of the Committee office by the Portuguese government which recently requested information on the etiology of nitrogen dioxide pneumonia in farmers caused by the fermentation of silage. The Institute Nacional Do Paõ requested the comments of the Committee and clarification concerning the chemical reactions involved in "silo-fillers disease" which has been reported from time to time in THE JOURNAL and other American Medical Association publications.

Service Activities.—The Committee on Pesticides collaborated with other groups and organizations during the past year on problems of mutual concern. It maintains close cooperation with the Inter-departmental Committee on Pest Control, Pesticides Regulations Section, United States Department of Agriculture and the Communicable Disease Center, United States Public Health Service. Through the Secretary, it is represented on the Sectional Committee on Common Names for Pest Control Chemicals (American Standards Association) and Liaison Panel, Food Protection Committee (National Research Council).

The Committee staff provided information and assistance to the Committee on Toxicology in the development of a model law to require precautionary labeling of hazardous substances. It reviewed existing labeling statutes, as applied to pesticides, and the members participated in the two American Medical Association legislative conferences on the labeling of hazardous substances.

During the past year, the Committee office was asked by physicians and private agencies to consider and render opinion on a variety of medico-economic problems involving the hazardous potentialities of pesticides. It considered problems such as prohibitive legislation against DDT; hazards of community fogging to counteract nuisance insects; optic neuritis, aplastic anemia, peripheral neuropathies and other syndromes with a history of exposure to pesticides. It also answered a growing number of telephone and mail inquiries. Representative of these inquiries are the following: directions for using ethylene oxide as a fumigant; the possibility of staph-pneumonia and granulocytopenia being associated with exposure to a household insecticide; experimental and clinical findings on the action of a dinitrophenol insecticide on nerve cells; and the possibility of a proprietary ant-roach product being the precipitating factor in peripheral neuritis and paresthesias of the extremities.

The Committee staff reviewed data pertaining to the hazards of mercurial fungicides. This review was undertaken at the behest of United States Public Health Service officials and firms marketing these products. Background data on the occupational hazards was already received from one firm. A survey has been initiated to determine occupational hazards of mercurial fungicides among workers involved in the manufacturing process and seed treatment. A literature search of published reports of injury was also undertaken. A report of findings is presently being prepared.

COMMITTEE ON REHABILITATION

Committee Activities

This is a report on the activities and decisions of the Intra-Association Liaison Committee on Rehabilitation, covering the period July 1, 1958, through June 30, 1959. The Committee is composed of representatives of the following: Council on Industrial Health, Council on Medical Education and Hospitals, Council on Medical Physics, Council on Medical Service, and Council on Mental Health.

The Committee on Rehabilitation held two meetings (in September, 1958, and March, 1959) during the 12-month period covered by this report. The Committee met with representatives of the U. S. Public Health Service Chronic Disease Program and the National Rehabilitation Association in order to discuss mutual rehabilitation interests and programs.

The U. S. Public Health Service booklet, "Strike Back at Stroke,". was reviewed and endorsed by the Committee.

A report was submitted to the Board of Trustees recommending that every constituent medical society which does not already have a committee on rehabilitation establish such a committee. The report also recommended that existing constituent society committees on rehabilitation which limit their activities to liaison and cooperation with state offices of vocational rehabilitation be encouraged to expand their activities. The report included a list of recommended guides for suggested activities and also contained a model questionnaire for use by a county medical society in surveying existing local rehabilitation services and facilities. The House of Delegates, at its December, 1958, meeting in Minneapolis, endorsed the recommendation that each constituent society establish a committee, if such a committee does not already exist, to carry out the recommended activities.

The Committee recommended to the Board of Trustees that the A. M. A. sponsor a motion picture on rehabilitation designed to (1) acquaint the practitioner with the magnitude of the rehabilitation problem from the standpoint of patients' needs and the opportunities that physicians have to increase their services by helping in the rehabilitation of their patients, (2) show the medical profession the techniques to organize medical and other phases of rehabilitation at the community level, (3) show by practical example how the practitioner can see to it that his patients receive these rehabilitation services which have been organized in the community, and (4) indicate the type of rehabilitation problems which warrant referring the patient to a comprehensive center. In this connection the film would show how the center can serve the patient while still respecting the referring physician's interest in his patient.

The Committee's recommendation was approved by the Board, and subsequently a script for the film, entitled "Rehabilitation Adds Life to Years" was approved by the Committee. It is expected that the film will be ready for showing by December, 1959.

The extent to which nonmedical aspects of rehabilitation should be included within a rehabilitation center was considered at a joint meeting of the Committee on Rehabilitation and the Committee on Medical and Related Facilities of the Council on Medical Service, particularly in relation to the section of the Hill-Burton Act which provides funds for the construction of hospital rehabilitation facilities.

At this joint meeting it was agreed that all services (i. e., medical, psychological, social, educational, and vocational) should be available in the community. However, it was not deemed essential that all services be contained in one building or unit. Centers of the multiple disability type were favored and the Committee decried the establishment of centers serving only a single type of disability. The Committee favored constructing rehabilitation centers in close geographical proximity to community hospitals and believed there should be good administrative liaison between the two facilities. The Committee opposed the establishment of "free-standing centers," i. e., centers not in close proximity geographically and administratively to community hospitals.

The Committee voted to ask individuals to prepare articles on pertinent aspects of rehabilitation for publication in THE JOURNAL for the information of the medical profession. The following papers have been approved for publication: (1) "The State-Federal Rehabilitation Program," (2) "Training in Physical Medicine and Rehabilitation," (3) "Social Service in Rehabilitation," and (4) "Psychiatric Rehabilitation."

At the request of the Council on Mental Health the Committee on Rehabilitation considered within the purview of its program inclusion of psychiatric problems involved in the care of children undergoing rehabilitation. It invited a physician to prepare a brief general article on this subject for inclusion in the series of articles sponsored by the Committee. In addition, the Committee decided to refer this special problem to the Council on Mental Health for development of a report containing recommendations on effective rehabilitation programs for children who are physically disabled, mentally ill, or emotionally disturbed, for use by the Committee on Rehabilitation in promoting this aspect of rehabilitation.

The Committee voted to include the following subjects in its series of articles intended for publication: "Paying for Rehabilitation," "Assessing Rehabilitation Services in a Metropolitan Area," "The Rehabilitation Program in Ontario for Occupational Injuries," and "The Role of the Medical Consultant in the State Rehabilitation Agency."

The Committee on Rehabilitation at the request of the Council on Legislative Activities, commented on certain items of legislation and recommended opposition to: H. R. 122, H. R. 3465, H. R. 1119, and S. 722, 86th Congress.

COMMITTEE ON RESEARCH

Committee Activities

The Committee on Research recommended that it be made autonomous and be separated from the Council on Drugs since there was an increased concern on the part of the A. M. A. in research and since the field of activity of the Committee on Research was developing differently from that of the the Council on Drugs. This recommendation was transmitted to the Council on Drugs and the Director of the Division of Scientific Activities where it is under study.

The establishment of a Subcommittee with a Registry concerned with the adverse reactions of drugs on the central nervous system patterned after the Subcommittee on Blood Dyscrasias and its Registry was recommended. This matter was considered by the Council on Drugs and transmitted to the Board of Trustees where it is now being reviewed.

A request from a group of gastroenterologists that a survey be made on the incidence of ulcerative colitis, ileitis, and regional enteritis in the United States was disapproved since the Committee felt that the problem could best be resolved by specialty groups or in a number of large active centers.

The Committee approved the publication of an article entitled, "Experimentation in Man" by Henry K. Beecher, M.D., professor of anesthesiology, department of anesthesiology, Harvard University Medical School and Massachusetts General Hospital.

Subcommittee on Publications.—Closer liaison between the Editor of THE JOURNAL, the Council on Drugs and the Committee on Research has been urged. This has been discussed with the Editor of THE JOURNAL and the Secretary of the Council on Drugs to avoid duplication of effort. Lists of titles of proposed articles dealing with basic science research would be exchanged between the three groups.

Subcommittee on Grants-in-Aid.—A more extensive program of research grants has been urged and during the past year 83 applications were processed and 71 awards were made.

Subcommittee on Breast and Genital Cancer.—The Subcommittee recommended the preparation of a compilation of all of the data accumulated in the Mammary Cancer Study in order to provide investigators in the field of cancer research with all of the statistical information derived in the Study and suggested that the material be distributed with the Report of the Study. This material is being prepared and will be ready for publication shortly.

The Subcommittee approved the recommendation that an editorial be prepared for THE JOURNAL and that it be published in the same issue as the final report. An editorial is being prepared by the Chairman of the Subcommittee.

Subcommittee on Diabetes and Pregnancy Wastage.—The Subcommittee recommended that the report forms used in the Diabetes and Pregnancy Wastage Study be revised with the help of a consultant statistician so that the information can be transposed to IBM punch cards for greater utility. The proposed revision is almost completed and will be ready for consideration at an early date.

The Subcommittee recommended that the investigators of the Diabetes and Pregnancy Wastage Study use gastric lavage on the infants of alternate cases delivered by cesarean section of diabetic and nondiabetic mothers to determine whether the procedure is worthwhile and harmless. This problem will be studied for a two year period before reaching any conclusion.

The Subcommittee recommended that we attempt to secure the cooperation of a Department of Obstetrics in a large West Coast hospital in order to have geographic distribution in the study. Arrangements will be made shortly to enlist the help of a Department of Obstetrics on the West Coast.

The Subcommittee agreed to hold its future annual meetings in conjunction with the meetings of the American

College of Obstetricians and Gynecologists to reduce the time away from their practices. The next annual meeting will take place on April 2, 1960, at Cincinnati.

Subcommittee on Blood Dyscrasias.—The Subcommittee recommended that the Registry on Blood Dyscrasias be expanded by wider distribution of the tabulation of the cases reported to it, and by inviting more physicians to submit reports on the cases that they have encountered. The tabulation has been distributed to state, county, and local medical societies; the libraries, and departments of medicine, pathology, pharmacology, pediatrics, neurology and psychiatry, of all the medical schools of the United States and Canada; and all of the hospitals in the United States.

The Subcommittee recommended preparation of an article and an editorial dealing with the development and work of the Registry on Blood Dyscrasias for publication in THE JOURNAL. The article and editorial appeared in the Aug. 15th issue of THE JOURNAL.

The Subcommittee recommended that a statement dealing with the subject of blood dyscrasias associated with chloramphenicol therapy be prepared and published in THE JOURNAL. A proposed statement has been transmitted to the Council on Drugs where it is being considered.

Staff Activities

Committee on Research.—Following the recommendations of the Committee on Research, the Food and Drug Administration was contacted and it was learned that their program for the reporting of adverse reactions to drugs has not developed any further than it had in 1956. This information was relayed to the Committee on Research and, at its Annual Meeting, the Committee voted to establish a Subcommittee on Adverse Reactions of Drugs on the Central Nervous System.

The recommendation that the Committee on Research be given autonomy was processed and forwarded to the Executive Vice-president for informal consideration. It was recommended that in the absence of complete information a full report on the subject be prepared. Subsequently, arrangements were made for a meeting of an ad hoc intramural Subcommittee on Program and Function in New York City on Feb. 18, 1959. The report of this meeting was reviewed and approved by the Committee on Research after which copies were transmitted to the Secretary of the Council on Drugs and the Director of the Division of Scientific Activities.

During 1958 the Secretary received letters from a number of outstanding gastroenterologists throughout the country suggesting that the Committee on Research undertake a survey on the rate of incidence of ulcerative colitis, ileitis, and regional enteritis in the United States because these conditions were increasing and represented a growing medical and economic problem. Some data was accumulated and presented to the Committee for its consideration. The Committee rejected the proposal on the basis that this type of problem could best be handled by specialty groups or in a few active large centers where such cases are seen.

Although the Subcommittee on Publications had been voted into existence there was considerable misunderstanding by the Chairman as to his authority and responsibility in connection with the activities of the Subcommittee. The Secretary discussed the matter with the Editor of THE JOURNAL and the Secretary of the Council on Drugs and every effort was made to avoid duplication by coordinating the lists of the proposed articles which each group was considering. Toward the end of 1958 the Chairman of the Subcommittee resigned because of the press of work and the Secretary offered to assume the responsibility for contacting the proposed prospective authors on the list but this suggestion was vetoed and the operation has been held in abeyance.

The Headquarters staff assisted in the editing and reproduction in the Committee on Research Bulletin of a manuscript by Dr. Henry K. Beecher entitled, "Experimentation in Man." When the Committee approved publication of Dr. Beecher's article the manuscript was forwarded to the Council on Drugs with the request that it be authorized for publication in THE JOURNAL (**169**:461-478 [Jan. 31] 1959).

Subcommittee on Breast and Genital Cancer.—The Secretary assisted the Subcommittee and its consultant biostatistician in the preparation of the final report and the compilation of the data of the Study of the use of steroids and hormones in the treatment of disseminated mammary carcinoma. The staff aided the Subcommittee in the preparation of tables, figures, graphs, and charts for both the final report and the compilation. It is hoped that compilation of the data will be completed in time so that it can be distributed with reprints of the Report.

Subcommittee on Diabetes and Pregnancy Wastage.—The Secretary has been working with one of the members of the Subcommittee on a proposed revision of all of the forms used in reporting the information in the Diabetes and Pregnancy Wastage Study. Consultation with a member of the Department of Biometrics at the University of North Carolina, Chapel Hill, has been undertaken and it is hoped that a form will be devised so that it will be simpler to code, index, and put the information on punch cards from the reported cases.

During the year the Secretary visited the collaborators at Boston, New York, Philadelphia, Chapel Hill, New Orleans, and Chicago, and met with the members of the staffs of the Departments of Obstetrics, Pediatrics and Medicine (diabetes) to work out the procedures for the handling of reports and tissues in each institution. Arrangements were made for the pathological examination of placental tissue and autopsy material in the Laboratories of the Department of Pathology, Harvard University Medical School, Boston.

During the current year the Secretary has devised a system for maintaining a quick reference to the status of all of the cases and for double checking of the cases and the investigators. Arrangements were made with a pharmaceutical firm to provide long-acting preparations to two of the collaborating investigators who are using the products on a "double blind" basis in the Study. The Study is divided into three parts, (*a*) one group at Boston in which all patients are being treated with steroids and hormones; (*b*) groups at New York and Philadelphia being treated with long-acting preparations on "double blind" basis; and (*c*) groups of "untreated" diabetics at Chicago and New Orleans which will serve as "controls."

Since the Subcommittee indicated a desire to hold future annual meetings in conjunction with the meetings of the American College of Obstetricians and Gynecologists, the Secretary has arranged for the next meeting to be held at Cincinnati on Saturday, April 2, 1960.

Subcommittee on Blood Dyscrasias.—After the staff had assembled the reports and prepared the semi-annual Tabulation of the cases reported to the Registry on Blood Dyscrasias through Dec. 31, 1958, the material was distributed to the state, county, and local Medical Societies; the libraries and departments of medicine, pathology, pediatrics, and pharmacology of all the medical schools in the United States and Canada; the physicians who had collaborated in the initial pilot study; and all of the hospitals in the United States. It was hoped through this means that more physicians would become aware of the existence of the Registry and would report cases.

The Secretary assisted in the preparation and editing of an article and an editorial which will discuss the development and work of the Registry (*J. A. M. A.* 170:1925 [Aug. 15] 1959; *J. A. M. A.* 170:1931 [Aug. 15] 1959).

The Secretary assisted the Subcommittee in the development and preparation of a statement dealing with blood dyscrasias associated with chloramphenicol therapy. This statement was processed through the Committee on Research Bulletin. After it was approved by the Committee it was transmitted to the Council on Drugs with the request that it be published in THE JOURNAL. The matter was considered by the Council on Drugs and it concluded that further discussion was desirable and placed the subject on the Agenda of its Annual Meeting scheduled for November, 1959.

During this past year the Secretary has been in contact with the officials of the American Society of Clinical Pathologists and the College of American Pathologists in an effort to enlist their help for the Registry on Blood Dyscrasias. It is hoped that by this means it may be possible to secure the help of a group of 20 to 30 pathologists who would be willing to assist in either reporting or getting attending physicians to report cases to the Registry. It was our desire to explore sections of the country other than the large metropolitan, teaching areas in order to obtain a more representative cross-section of the cases that we are missing since our present experience probably involves only a small segment of all of the cases which occur.

In December, 1958, the Secretary was invited to meet with Dr. Jonathan O. Cole, chief, Psychopharmacology Service Center, National Institute of Mental Health, Bethesda, Md., and the members of his staff to discuss the work of the Registry on Blood Dyscrasias. The Staff of the Psychopharmacology Service Center is concerned about the untoward reaction of drugs used in the care and treatment of patients with neuropsychiatric conditions. They were impressed with the simplicity and utility of our Registry. Subsequently, Dr. Cole advised the Secretary that the National Institute of Mental Health was unable to reach a decision concerning the advisability of setting up its own Registry. A second meeting developed the suggestion that the Psychopharmacology Service Center should make recommendations concerning individuals and institutions whose cooperation might be enlisted by the Registry on Blood Dyscrasias and any other Registry which may be developed under the aegis of the Committee on Research of the A. M. A. to study the adverse reactions to drugs.

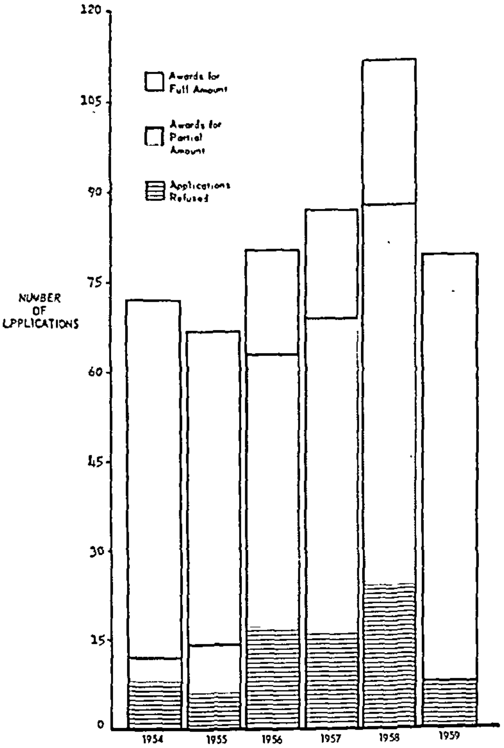

Fig. 1.—Number of applications received and number of grants awarded.

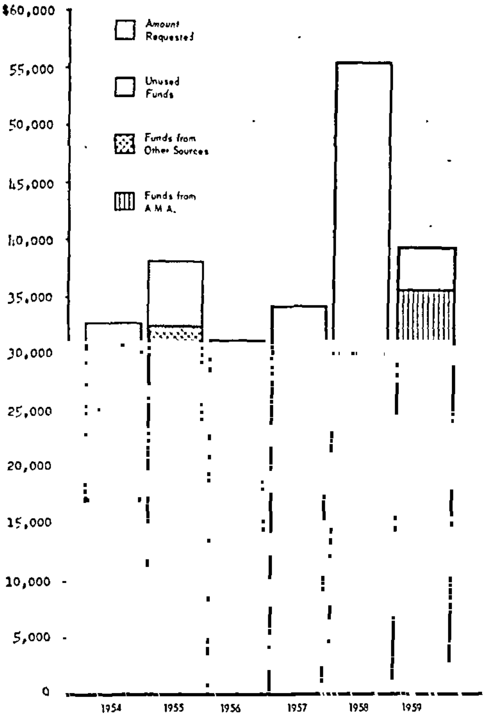

Fig. 2.—Amounts requested and funds available.

In attempting to bring the Registry to the attention of more physicians the Secretary appeared before the Midwest Regional Meeting of the American College of Physicians on Sept. 27, 1958, in Milwaukee, and discussed the organization and function of the Registry on Blood Dyscrasias of the A. M. A.

Subcommittee on Grants-in-Aid.—In view of the recommendation for a larger allocation for funds, the appeal to the Board of Trustees was made through the annual budget. The Board graciously allotted $35,000, or $5,000 more than last year's allotment, for this activity. The Subcommittee processed 83 applications—70 received full awards, 1 a partial award, 7 were rejected on the basis of the information, and 5 applicants whose requests came in late had to be advised that the funds were expended for 1959. Of the 71 grants awarded 68 were given to applicants from medical schools and 3 went to applicants from hospitals and other medical facilities. The Secretary reviewed all of the applications to determine the merit of the proposed project; whether the applicant had received previous grants; and the total number of awards made to each institution since the Subcommittee limits each institution to two awards per year. The Secretary conferred with the Chairman of the Subcommittee and the Director of the Department of Therapy and Research after his preliminary review and following this consultation the applications were forwarded to the members of the Subcommittee for consideration. Approval of applications resulted in the processing of the notification and preparation of a "contract" for the signatures by the investigator and a responsible official of the institution after which the awards were made.

COMMITTEE ON TOXICOLOGY

Committee Activities

This is the fifth annual report of the Committee on Toxicology. The following is a *résumé* of its more important activities and accomplishments during the past year.

Educational Activities.—The series of the Committee reports has been extended to eleven with the adoption for publication of reports on "Accidental Iron Poisoning in Children" and "Danger of Suffocation from Plastic Bags." The latter was a special progress report on a heretofor unrecognized environmental health hazard to which nationwide attention was first directed by the Committee on Toxicology.

The following special publications about legislation for the labeling of hazardous substances were also authorized: "Comparison of Chemical Specialties Manufacturers Association and American Medical Association Bills," "Summary of First American Medical Association Conference on Hazardous Substances Labeling Legislation," "Minutes of Second American Medical Association Labeling Legislation Conference," "Questions and Answers about Labeling Legislation," and the "Uniform Hazardous Substances Act"—a model for uniform laws to require precautionary labeling of hazardous substances in commercial, household, and industrial packaged chemicals.

A symposium on Accidental Poisoning was authorized for Committee sponsorship at the next Annual American Medical Association Meeting. The program which was recommended is to include "question and answer" type of presentations preceded by formal discussion by specialists in pediatrics, toxicology, environmental health, and accident prevention.

The Committee endorsed the resolution of Representative Jones of Missouri, now before the House of Representatives, which designates the second week in October as "National Poison Prevention Week." The Committee recommended five ways in which the American Medical Association could support this resolution and effectively participate in poison prevention activities.

Service Activities.—The Committee on Toxicology collaborated with other groups and organizations during the past year. The Committee continues its cooperation for a second year with the American Academy of Pediatrics and the American Public Health Association in a nationwide project to study the treatment of kerosene poisoning. Approximately 30 poison control centers and affiliated hospitals and clinics participated in this clinical study which is expected to take from three to five years. An initial result of the study has been the discovery of a means for determining blood levels of absorbed petroleum distillate. The value of anti-inflammatory agents such as steroid hormones has also been investigated A progress report on 473 cases studied to date was presented at the Ninth International Pediatric Congress, July, 1959, in Montreal.

The Committee continues its participation in the study by the Research and Reference Branch of the United States Food and Drug Administration of toxic reactions to drugs in select hospitals throughout the country. This study is intended to determine the frequency, extent, and duration of injury from drugs among hospital patients. During the past year, 161 cases from 10 cooperating hospitals were reviewed.

A special subcommittee has been appointed to study the technical problems involved in maintaining the identity and character of the toxicology program of the Committee within the framework of a broader study of environmental health hazards. The sub-committee has suggested that, because of the major importance of toxicity hazards and the contributions the Committees have made to their understanding, the present programs of the Committees on Pesticides and Toxicology be retained as a nucleus for an expanded program of study of environmental hazards affecting public health.

The Committee reviewed 16 potential projects for development of safety standards for the American Standards Association. Four projects were recommended in which information and other Committee facilities could be of help in developing standards.

Legislative Activities.—The Committee sponsored an industry-wide label law conference on July 25, 1958. This was the second national meeting to discuss proposed legislation requiring the declaration of hazardous ingredients and warning statements on the label and in the accompanying literature of household, commercial, and industrial packaged chemicals. It was attended by representatives of over 60 industry trade associations, toxicity testing laboratories, chemical trade unions, and similarly interested groups. Following a recommendation of this conference, the Committee met in a high level conference with industry representatives in Cleveland, November, 1958. The exchange of views led to proposals for modifications which did not appear in the original drafts of either bill but which seemed to meet the objectives of both groups. The five affected trade associations have adopted a modified bill reflecting many of the tentative agreements reached during the meetings last fall.

In January, 1959, a joint meeting was held between representatives of the Council on Industrial Health and members of the Committee on Toxicology to discuss the proposed hazardous chemical labeling legislation. It was agreed that tremendous progress had been made in resolving issues which were felt to be of considerable importance and on which there had been major disagreement. The representatives of the Council on Industrial Health indicated their sympathetic understanding of the treatment of the problems that had arisen in connection with the drafting of the law and on the basis of latest developments indicated their approval in general of the intention and principles in the development of a model law.

The American Medical Association sponsored "Uniform Hazardous Substances Act" was introduced into Congress by Representative Thomas Curtis on May 25, 1959, as H. R. 7352. The Committee subsequently submitted a seven-point program to support passage of this legislation.

The Committee also provided technical assistance to the New York City Health Department in revision of the section of the New York City Sanitary Code concerned with hazardous substances. The revised Sanitary Code was approved by the New York City Board of Health in December, 1958.

Staff Activities

The staff of the Committee on Toxicology was engaged in the following activities during the past year:

Educational Activities: Publications.—The following reports were prepared for publication in the Committee column in The Journal: "*Accidental Iron Poisoning in Children*" and "Danger of Suffocation from Plastic Bags." Other staff reports appeared in *The Food, Drug and Cosmetic Law Journal* ("Closing the Gap in Label Legislation"), *Monthly Bulletin of DiCyan and Brown* ("The Philosophy of Label Legislation"), and in *The Sanitarian* ("Labels, Legislation and Our Expanding Chemical Environment").

The following special publications were prepared as background information on legislation for the labeling of hazardous substances: "Digest of Uniform Hazardous Substances Act," "Comparison of Chemical Specialties Manufacturers Association and American Medical Association Bills," "Summary of First American Medical Association Legislative Conference," "Minutes of Second American Medical Association Legislative Conference," "Condensed Table of Existing Label Laws for Chemicals" and "Questions and Answers."

Confidential Bulletins comprising nearly 400 pages of transactions of Committee business were prepared by the office staff for circulation among the members of the Committee on Toxicology.

Reprints.—Several thousand reprints of the two latest Committee reports have been distributed to medical societies, public health and regulatory groups, various organizations, and individuals in this country and abroad. Over

5,000 reprints of the report "Recommendations of the Committee on Toxicology on First-Aid Measures for Poisoning" have been distributed and authorization to reproduce the report as a public service pamphlet has been given to Walter Reed General Hospital, Agricultural Extension Service, United States Department of Agriculture, Canadian Department of Agriculture, American Telephone and Telegraph Company (3,000 copies), and the National Pest Control Association (20,000 copies).

Two volumes of Committee on Toxicology publications were prepared in loose-leaf form in response to requests for permanent bound copies for reference use.

Information Services.—The Secretary met with representatives of the National Safety Council and the National Association of Poison Control Centers to consider an educational campaign for the public on the prevention of accidental poisoning. Tentative plans were discussed for studying existing educational programs of various public and private agencies and coordinating these efforts in a unified educational program.

A description of the Committee's program for study of accidental poisoning, published reports illustrating work done by the Committee and its relationship with poison control centers was provided to Cornell University as background for lectures on the poison prevention movement. The Secretary addressed the Medical College of Virginia on current toxicologic problems. This is the second year that an invitation has been extended.

During the past year, the Committee was asked by public and private agencies to consider and render opinion on a variety of problems involving the hazardous potentialities of chemicals. Several hundred inquiries on the health aspects and usefulness of commercial, household, and industrial products were also answered by the Committee office. Assistance was provided various departments at Headquarters in the preparation of book reviews, "Questions and Answers," reviewing manuscripts, and advertising on matters involving toxicology.

Investigative Activities.—The danger of suffocation to small children who play with plastic garment bags was brought to the attention of various national and local health agencies by the Committee office in February. At that time, the Committee was advised by a local medical society that four deaths in one week were reported in a western city. As a result of this early warning, various municipal health departments prepared technical notices and news releases about infants dying from suffocation by plastic material. A feature story in the April 25th issue of THE JOURNAL (Medicine at Work) on the problem and the Committee's effort to sound a warning prompted nationwide publicity in *Time* Magazine and over various wire services.

In the meantime, the committee office continued its investigation and contacted The National Safety Council, The Society of the Plastics Industry, and manufacturers of polyethylene plastics to determine the static characteristics of various grades of polyethylene and other technical aspects in the production and manufacture of plastic garment bags. Significant facts were obtained for evaluating the practical hazard of thin plastic sheets to crawling infants and small children who may encounter them as discarded garment bags, food wrappings, and table and furniture coverings. To date over 70 deaths have been uncovered.

The hazards of suffocation from misuse of plastic garment bags occupied a substantial amount of time of the Committee staff. Meetings were successively held with representatives of The Society of the Plastics Industry, Inc., *Life* Magazine, and the Chicago Health Department. Interviews were held with news reporters; facts were collected for feature stories in THE JOURNAL and the *AMA News*, and a 25-page Special Bulletin on status of problem was prepared for members of the Committee on Toxicology.

As a result of the Committee's alert, the U. S. Public Health Service initiated a nationwide epidemiologic survey of reported injuries. The Pastics Industry has prepared an educational booklet on hazards and radio and TV stations donated time for spot announcements on the plastic bag hazard at time of newscasts. Bills to require warning labels were introduced into Congress and various state and local legislatures including Illinois legislature and the Chicago City Council. A progress report to the medical profession has been prepared for JOURNAL publication summarizing the record of injury and the remedial measures which have been undertaken.

The annual compilation of accidental poisoning statistics was prepared from weekly reports received from the American Red Cross and the monthly reports of the New York Poison Center. These compilations provide information about relative incidence of injury from various types of substances involved in poisoning. A compilation of accidental poisoning cases taken from newspaper clippings, covering the period from 1955 through 1958, was completed in February. The data revealed the pattern of nonfatal injury to be as follows: poisoning from internal medications is most frequent followed by cases due to insecticides and rodenticides, household agents, industrial and other solvents, and miscellaneous products such as cosmetics. Seven hundred and seven deaths from substances in all categories were reported during this period.

Service Activities.—Through the Secretary, representation is maintained on the Committee of the Chicago Poison Control Center, the Steering Committee of the National Clearinghouse for Poison Control Centers, the American Standards Association—Z66 Committee on Hazards to Children, and the United States Food and Drug Administration's Committee on Adverse Reactions to Drugs. During the past year, the Secretary addressed the Association of Food and Drug Officials of the United States, the Annual Educational Conference of The National Association of Sanitarians and the Ohio State Medical Association's Poison Control Conference. He was elected to membership in the Royal Society of Health, Great Britain, and was appointed Councilor for the Occupational Health Section of the American Public Health Association. He also contributed to a textbook on toxicology recently published by the Oxford University Press.

Liaison is maintained with the American Academy of Pediatrics, American Association of Poison Control Centers, American Public Health Association, American Standards Association, National Research Council, and the United States Food and Drug Administration. The Committee on Toxicology is a joint sponsor or participating member of inter-organizational undertakings with one or more of the foregoing groups.

The Committee office arranged for two public conferences on the labeling of hazardous substances, a luncheon meeting of the Occupational Health Section of the American Public Health Association, a joint meeting with the Council on Industrial Health, and for the Annual Meeting of the Committee on Toxicology.

The Committee office reviewed and commented on hazardous substances bills introduced in several state legislatures and in both houses of Congress. Assistance was provided in the revision of the clinical toxicology section of the "Standard Nomenclature of Diseases and Operations."

Respectfully submitted,

LEONARD W. LARSON, M.D., *Chairman*
JULIAN P. PRICE, M.D., *Vice Chairman*
HUGH H. HUSSEY JR., M.D., *Secretary*
JAMES Z. APPEL, M.D.
GEORGE M. FISTER, M.D.
PERCY E. HOPKINS, M.D.
RAYMOND M. MCKEOWN, M.D.
CLEON A. NAFE, M.D.
RUFUS B. ROBINS, M.D.
LOUIS M. ORR, M.D.
E. VINCENT ASKEY, M.D.
J. STANLEY KENNEY, M.D.
NORMAN A. WELCH, M.D.
MILFORD O. ROUSE, M.D.

STAFF ACTIVITIES

Report of the Executive Vice President to the Board of Trustees

This first annual report of the Executive Vice President to the Board of Trustees covers the period of July 1, 1958 to June 30, 1959.

During this period, the major event was the reorganization of the staff. As previously reported, the staff was reconstituted into seven broad divisions. The Directors of these divisions have reported their respective activities during the reporting period; but I should like to add a few special comments. It is my conviction that the reorganization has streamlined our organizational structure, eliminated much overlapping and duplication of effort, established clear lines of command, and resulted in increased efficiency and productivity.

I am certain that the over-all legislative program of the American Medical Association is far more effective than it was previously. The reorganization of the Washington Office into Divisional programs with the personnel of that office answering to their respective divisional directors in Chicago has resulted in clearer lines of communication and an identity of interest of the Washington office staff with the AMA staff in Chicago.

The Division of Scientific Activities, under the direction of Dr. Edward L. Turner, is now reappraising its entire program. I predict that the many diverse programs now included within that division will undergo considerable change and expansion, or retraction, as the case may be, during the next reporting period. In any event, the coming changes will be designed to promote ever increasing scientific prestige of this Association.

During the next year, I shall make additional recommendations to the Board of Trustees to carry forward the basic reorganization which has now been completed. I am hopeful that, when these administrative changes are made, the morale and efficiency of the members of the staff will be further strengthened and their relations with councils and committees to which they are assigned as secretaries will be better defined. Some confusion still exists in the minds of some members of the staff regarding the source of their authority and the person to whom they report. This situation is particularly true of council secretaries. We are hopeful that the responsibility of a council secretary will be so defined during the coming year that he will understand that he answers to respective staff through department and divisional levels to the Executive Vice President but is assigned to provide specific service to a committee or council. When the administrative structure is more clearly appreciated by the staff, I am convinced that committees and councils of the Association will receive even better staff service.

The remodeling of the AMA headquarters building was begun in summer of 1958 and in June was proceeding according to plan. The AMA will be housed in a modernized air-conditioned office building by the end of this year.

During this period, innumerable conferences and meetings have been attended; an enormous amount of mail has been processed; the new administrative regulations and policies have been established; and the Board of Trustees, its committees, and the House of Delegates have been provided staff service. It has been a busy, challenging, fruitful, and exciting year.

Report of the Assistant Executive Vice President to the Executive Vice President

During the reporting year, the Assistant Executive Vice President assisted the Executive Vice President in the administration of the headquarters office, and the staff servicing of the Board of Trustees and the House of Delegates. He acted for the Executive Vice President in his absence and represented him at selected meetings.

In addition to his other duties, he was Director of the Staff Task Force on the Forand campaign, whose objective was to coordinate and plan the campaign at a staff level. This important responsibility will continue into the next reporting year, since the Forand bill remains a serious threat in the 1959-1960 Congress.

Report of the Assistant to the Executive Vice President

As assistant to the Executive Vice President, Mr. Thomas A. Hendricks is responsible for special assignments in connection with the operation of the Executive Vice President's office, assisting the Executive Vice President in handling official correspondence, visitors and meetings.

During the year he carried out many special assignments in connection with the operation of the Executive Vice President's office. Among these tasks:

He served as AMA staff respresentative at the annual U. S. Chamber of Commerce meeting in Washington;

He was liaison representative between local arrangements committee and the AMA for the Second World Conference on Medical Education, held in Chicago;

He acted as staff observer at the annual AAPS meeting in Fort Worth, Texas;

He attended as observer the annual session of the National Health Council, and served as chairman for the meeting between the staffs of that council and the AMA following that meeting;

He moderated the panel on "Princeton's Contribution to American Medicine" at Princeton, New Jersey;

During the year he spoke at many state and local medical society and auxiliary meetings, and aided in the indoctrination of the field service staff;

From time to time he fulfilled assignments for the AMA News and The Journal;

He was co-author of article "The Emblem of the American Medical Association";

He sat in as representative for the office of Executive Vice President on many committee and council meetings;

He is responsible for the assembling and production of the monthly periodic reports, which serve to keep the staff up-to-date on programs, developments and progress of the various AMA divisions;

He is serving as President of the Medical Society Executives Association; and

He is a director on the National Board of the Public Relations Society of America.

REPORT OF THE RESEARCH ABSTRACTER OFFICE OF E. V. P.

Proceedings of the House of Delegates.—Six issues of the Official Proceedings of the House of Delegates (June 1956 to December 1958) were completed, bringing this basic policy document up to date. The format was completely revised and, instead of a chronological listing of events verbatim, material was organized and selected so that reference need not be made to three or four different locations in tracing through an action.

The index, formerly 16 pages long, was replaced by one which is two and a half pages and more comprehensive in coverage. Rather than designating an item by the multiple key words in its title, the new index attempts to reach items of policy within a report or resolution. The conciseness of this index lends itself to cumulation.

The new Proceedings attempt to be a complete historical record of a given meeting, including a directory of officers, committees and delegates, as well as policy matters.

Digest of Official Actions.—The encyclopedia of A. M. A. policy, covering the years 1846 to 1958, was completed during the period of this report. Printing of the Digest has commenced and the volume should be ready for distribution by September 1959.

To insure continuity, supplements to the Digest will be prepared in five year intervals and periodically cumulated.

Reference Service.—An integrated medical socio-economic reference service was developed for the use of headquarters staff and outside persons, incorporating House and Board actions, council decisions, and *The Journal* editorials. Reports were furnished for many special committees, including the Joint Committee to Study Paramedical Areas in Relation to Medicine, the Committee on Scientific Activities, and the Committee on Atomic Medicine and Ionizing Radiation. Background for testimony was regularly provided for the Law Division; facts were established for the Communications Division; a 90-page brochure on House policies was compiled for the Field Division. For the Office of the Executive Vice President, resolutions were analyzed and background material furnished for reference committees prior to each House session.

Consultant Activities.—The research abstracter served as consultant in the area of library and indexing services for headquarters.

1. Quarterly Cumulative Index Medicus: Professional advice was given over a one-year period with regard to the discontinuation of this publication and the proposal of the National Medical Library.

2. Survey of the A. M. A. Library: Assistance was provided to Dr. Thomas Fleming of Columbia University in a survey of the Library of the American Medical Association and its program in the field of international medical indexing.

3. Medical Socio-Economic Library: Several departments within the Division of Socio-Economic Activities expressed a desire for establishment of a division library, pooling book, periodical and file holdings. Subsequently, each department was surveyed with reference to scope, classification and administration of materials. Suggested floor plans were completed for Dr. Yoder.

4. Microfilm: At the request of the Business Manager, an extensive study was made of the use of microfilm in records management, covering legal and technical aspects as well as data retrieval methods.

5. Developments in Library Field: The research abstracter attended (1) an international conference on scientific information, sponsored by the National Academy of Sciences, and reported developments in data storage and retrieval; (2) meeting of the National Medical Library Association at which significant trends in the medical library field were reported in relation to the program of the American Medical Association.

6. Canadian Medical Association: Assistance was given to the Canadian Medical Association in setting up methods for handling socio-economic materials. The subject authority file, compiled by the research abstracter, was requested by the C. M. A. in setting up its filing and indexing program.

Medical Socio-Economic Indexing.—At the direction of the Assistant Executive Vice President, a comprehensive indexing program to coordinate all basic policy documents of the American Medical Association was begun. These documents include proceedings of the House of Delegates, minutes of the Board of Trustees and minutes of the several committees and councils.

Steps were taken to define the problem. A survey of departments at headquarters was made with regard to (a) the need for an index or guide to proceedings; (b) scope of material to be indexed; (c) nature of information desired—level of complexity.

First edition of a subject authority file, central to an indexing program, was completed for the field of medical socio-economics. This twenty-one page list is the first to be produced in this area; the nomenclature is based upon a long term view of the activities of organized medicine (from 1846) and the mechanics upon a complex of cross headings.

In addition to subject, entries are made under organizations and names; thus, for a given individual or organization, there will be a complete guide to relationships with the American Medical Association.

The objective of this program is the development of a central reference and indexing service for the Association in the field of medical socio-economics.

REPORT OF THE BUSINESS DIVISION

In August 1958, the reorganization of the headquarters staff resulted in the formation of the Business Division which included eight operating departments—Accounting, Advertising Sales, Building Maintenance, Circulation & Records, Contract Printing, Convention Services, Operating Services, and Personnel. From July 1, 1958, to June 30, 1959, the Business Division accomplished the following:

A. M. A. Building Program.—The renovation of the A. M. A.'s headquarters building in Chicago has proceeded according to schedule and will be completed in December 1959. Air-conditioning equipment with seven-thousand tons of capacity has been installed and modern office facilities are being created.

Convention Services.—The Convention Services Department has continued to expand its area of services in connection with the Annual and Clinical Meetings. The facilities of several cities have been surveyed, and on the basis of these studies, recommendations for meeting sites for future years have been made to the Executive Vice President.

Advertising Department.—Following the reorganization in August 1958, the Advertising Sales Department was charged with responsibility for the sale of advertising in all A. M. A. publications. Advertising rates were increased for THE JOURNAL of the American Medical Association on January 1, 1959, and present plans call for increases in the advertising rates for other A. M. A. publications in the near future. These increases will reflect the expanded circulation of these publications and will offset the increases in the cost of their production.

Accounting Department.—The Accounting Department undertook a study of the past accounting and budgetary practices of the Association and recommended to the Executive Vice President that the accounting and budget system be completely revamped. These recommendations were endorsed by the Association's auditors, Peat, Marwick, Mitchell & Co., were recommended to the Board of Trustees by the Executive Vice President and were made effective January 1, 1959.

Personnel Department.—The Personnel Department, in addition to providing service to all of the other departments and divisions, participated in several basic studies in the personnel area. The Wage and Salary Administration Program, within which the compensation of all staff personnel is administered, was reviewed and several improvements made. The existing Employee Pension Program was restudied and recommendations for its improvement will be forthcoming. Studies were begun for the publication of a manual describing the organization and the operating policies in effect at headquarters.

The Personnel Department also participated in the planning of the remodeled cafeteria and in launching a monthly employee magazine.

Contract Printing.—The Association continues to purchase all of its printing from outside sources, and at present, is using three different printing firms for the production of its regular publications. During the year, over 21 million copies of these publications were produced and distributed to A. M. A. members and to other subscribers.

Operating Services.—The activities of this Department were reorganized and major improvements were effected in the handling of mail and telephone calls and in providing purchasing and reproduction services to all other departments.

During the year, almost 4,000 separate reproduction jobs were handled by this Department.

Circulation & Records Department.—Membership in the A. M. A. *increased by 7,019 during the fiscal year July 1,* 1958, through June 30, 1959. A breakdown of the membership records as of June 30, 1959, follows:

Reported Through Constituent Societies

	AS OF *6/30/59*	AS OF *6/30/58*
Active Members dues paid	140,167	136,062
Active Members exempt from dues	10,811	10,344
Associate Members exempt from dues	6,439	6,293

Reported Direct

Service Members exempt from dues	18,654	16,352
Affiliate Members exempt from dues	278	278
Honorary Members exempt from dues	88	89
Total Membership on June 30	176,437	169,418

The next table shows the number of physician members of constituent medical associations who also hold membership in the American Medical Association. For reference, the total number of physicians licensed to practice medicine and currently residing in the state is also indicated. The apportionment of the delegates to the A. M. A. House of Delegates is based on the membership as recorded on December 31 of each calendar year, and this should not be confused with the following June 30 report:

A. M. A. Membership Report June 30, 1959

Constituent Society	Active Dues Paying Members	Active Dues Exempt Members	Total Active Members	Associate Dues Exempt Members	Total of All Members	Total Licensed Physicians Residing in State
Alabama	1,589	290	1,879		1,879	2,444
Alaska	78	6	84	3	87	109
Arizona	900	45	945	54	999	1,184
Arkansas	959	123	1,082		1,082	1,627
California	15,313	619	15,932	1,356	17,288	23,642
Colorado	1,738	301	2,039	310	2,349	2,577
Connecticut	2,405	159	2,564		2,564	4,084
Delaware	363	38	401		401	522
D. C.	1,182	103	1,285	206	1,491	2,530
Florida	3,200	216	3,416	19	3,435	5,608
Georgia	2,162	296	2,458	20	2,478	3,505
Hawaii	399	17	416	22	438	622
Idaho	498	1	499		499	574
Illinois	9,102	958	10,060		10,060	12,514
Indiana	3,427	726	4,153		4,153	4,491
Iowa	2,063	280	2,343	31	2,374	2,737
Isthmian C.Z.	11	9	20		20	83
Kansas	1,314	224	1,538	2	1,540	2,227
Kentucky	1,798	65	1,863	84	1,947	2,645
Louisiana	1,886	13	1,899	76	1,975	3,496
Maine	535	118	653	1	654	981
Maryland	1,818	272	2,090	249	2,339	4,028
Massachusetts	4,472	589	5,061	60	5,121	8,926
Michigan	5,502	375	5,877	245	6,122	8,498
Minnesota	2,988	366	3,354	152	3,506	4,465
Mississippi	1,130	187	1,317	4	1,321	1,652
Missouri	2,902	471	3,373		3,373	4,855
Montana	517	23	540	48	588	630
Nebraska	1,146	31	1,177	97	1,274	1,523
Nevada	224	6	230		230	283
N. Hampshire	450	51	501	7	508	788
New Jersey	5,341	253	5,594	373	5,967	7,159
New Mexico	492	43	535		535	695
New York	16,654	116	16,770	1,242	18,012	31,734
N. Carolina	2,665	192	2,857		2,857	4,150
North Dakota	413	34	447		447	500
Ohio	7,696	595	8,291		8,291	11,272
Oklahoma	1,541	162	1,703	108	1,811	2,194
Oregon	1,348	125	1,473	264	1,737	2,242
Pennsylvania	10,541	297	10,838	944	11,782	14,854
Puerto Rico	181		181		181	1,060
Rhode Island	691	90	781		781	1,051
S. Carolina	1,126	110	1,236		1,236	1,822
South Dakota	366	22	388	28	416	486
Tennessee	2,306	184	2,490	20	2,510	3,595
Texas	6,660	499	7,159	218	7,377	9,295
Utah	776	43	810		819	1,083
Vermont	370	47	417		417	575
Virgin Islands	18		18		18	27
Virginia	1,739	259	1,998	42	2,040	3,915
Washington	2,573	264	2,837	4	2,841	3,432
West Virginia	1,307	151	1,458		1,458	1,643
Wisconsin	2,975	338	3,313	150	3,463	4,064
Wyoming	247	9	256		256	271
Transfers (Direct)	70		70		70	
Total in U. S. & Possessions	**140,167**	**10,811**	**150,978**	**6,439**	**157,417**	**220,969**
U. S. Army		4,622	4,622		4,622	4,622
U. S. Navy		3,753	3,753		3,753	3,753
U. S. Air Force		3,807	3,807		3,807	3,807
U. S. P. H. S.		1,792	1,792		1,792	1,792
U. S. Vet. Admin.		3,771	3,771		3,771	3,771
U. S. Government Retired (Residing in States)		909	909		909	
Total Service Members		**18,654**	**18,654**		**18,654**	
Affiliate Members					278	
Honorary Members					88	
Total All Classifications	**140,167**	**29,465**	**169,632**	**6,439**	**176,437**	**238,714**

The circulation of A. M. A. publications continued to rise in most cases and as of June 30, 1959, reached the following levels:

THE JOURNAL A. M. A. (weekly)	169,494
SPECIALTY JOURNALS (monthlies)	
INTERNAL MEDICINE	11,925
DISEASES OF CHILDREN	9,303
NEUROLOGY & PSYCHIATRY	6,652
DERMATOLOGY	6,155
PATHOLOGY	5,258
OPHTHALMOLOGY	8,346
OTOLARYNGOLOGY	6,666
SURGERY	10,559
INDUSTRIAL HEALTH	3,955
A. M. A. NEWS (bi-weekly)	260,563
TODAY'S HEALTH (monthly)	556,194
AMERICAN MEDICAL DIRECTORY, 20th Edition (biennially)	16,845

REPORT OF THE COMMUNICATIONS DIVISION

The period covered by this report is July 1, 1958, to June 30, 1959.

In the early weeks of this period the former Department of Public Relations was reorganized into four departments—Media Relations, Program Development, Services to Officers and Special Services—in the newly created Communications Division. In addition, the Department of Medical Motion Pictures and Television, the Bureau of Exhibits, Today's Health Editorial and A. M. A. News Editorial became units of the Communications Division.

The new Division as a whole is aimed at a coordinated effort to give both the public and the medical profession a positive concept of the American Medical Association itself and of the scientific and socio-economic advances in medicine.

Advisory Committee.—To help achieve that objective, the Advisory Committee to the Director of the Communications Division met four times and gave valuable advice on ways and means of solving medicine's public relations problems. Members of the Advisory Committee were:

Mr. George Saville, Chairman
  Assistant Executive Secretary, Ohio State Medical Association
Mr. Ed. Clancy
  Director of Public Relations, California Medical Association
Mr. John C. Foster
  Executive Secretary, South Dakota State Medical Association
Mr. Joseph L. Gordon
  Executive Secretary, Hartford County (Conn.) Medical Association
Mr. Robert I. Howard
  Executive Secretary, Medical Society of Virginia
Mr. Milton D. Krueger
  Executive Secretary, Medical Association of Georgia
Mr. W. Harold Parham
  Executive Director, Florida Medical Association
Mr. Donald L. Taylor
  Executive Secretary, Iowa State Medical Society
Mr. C. Lincoln Williston
  Executive Secretary, Texas Medical Association

COMMUNICATIONS RESEARCH

This new section researches medical and non-scientific materials for Communications Division writers and reporters for mass media. Aided by an enlarged, centralized reference library, the section handled an average of 13 research requests per week.

Department of Media Relations

PRESS RELATIONS

Service to Newsmen.—The press section provided a continuing service to newspaper, wire service and news magazine reporters—handling an average of 15 requests for information a week.

Annual Meeting.—The Atlantic City meeting attracted one of the widest press coverages ever given a medical meeting. Press room total registration was second only to that at the 1957 annual meeting in New York. Western Union employed 40 persons to man a battery of 20 teletype machines which handled an unprecedented quarter-million words of wire copy. The registration included 56 newspapermen, 20 members of the Washington press corps, 23 radio and television reporters, 26 magazine and free lance writers, 73 members of the medical trade press and 44 advertising and public relations representatives, for a total of 242.

President Eisenhower's address at the inaugural ceremony gained a vast amount of news and editorial coverage throughout the country. Extensive coverage also was given to Dr. Gunnar Gundersen's House of Delegates address, House actions on osteopathy and the report of the Commission on Medical Care Plans, and several of the scientific papers.

Clinical Meeting.—The Minneapolis meeting drew a total press room registration of 54 persons. Excellent news coverage was obtained in the Twin-City area, and good nationwide publicity resulted from the efforts of Associated Press and the New York Times. Stories which attracted particular attention were the General Practitioner of the Year award, Minnesota Governor Orville Freeman's address to the House of Delegates, the House action regarding adjusted fees for the aged with low incomes or limited family resources, and discussion of the report of the Commission on Medical Care Plans.

Special Meetings.—Through advance news packets, press room services and follow-up informational activities, the Press Section provided news coverage for the following conferences or meetings sponsored by the Association: two symposia on Foods and Nutrition, three conferences (two national and one regional) on medical aspects of National Defense, Mental Health Conference, Congress on Medical Education and Licensure, Congress on Industrial Health, Conference on Rural Health, three conferences on Medicolegal Problems, a national planning conference and a regional conference on Aging, and two press conferences on the Medical Aspects of Sports Injuries. In addition, the press staff assisted with publicity for meetings sponsored by the Joint Council to Improve the Health Care of the Aged, the National Health Council and the Homemaker Service Conference.

Special Releases.—In addition to the weekly news release, which now goes to almost 3,000 outlets, special stories were issued on A. M. A. appointments and resignations, A. M. A. program on aging, formation of new committee to coordinate audio-visual aids in the staphylococcus education program, publication date for A. M. A. News, year-end roundup on future of medical research, model law to cut poison deaths, progress in health programs for the aged, and speeches by Association officers on quackery and aging.

MAGAZINE RELATIONS

New Staff Member.—At the Minneapolis session the House of Delegates recommended increased liaison with magazine writers and editors. In order to accomplish this end, the Department secured the services of an editor formerly employed by Time, Inc. and Pageant.

Continuing Services.—Approximately 180 requests for assistance in the preparation of medical or health articles were received and serviced. The material provided has been used for articles in 30 mass circulation magazines, including Saturday Evening Post, Life, Reader's Digest, Good Housekeeping, Coronet and Family Weekly. In the same period a total of 63 articles came in for review.

Expanding Program.—To increase liaison with magazines and free lance writers, a letter was sent in February to editors of the 25 major consumer publications and to more than 150 members of the Society of Magazine Writers, telling them about expansion of the magazine relations section and its services. Follow-up trips to New York were made to contact editors and writers personally for discussions of story ideas and common problems. The new program is placing greater emphasis on the origination and placement of story ideas with magazines and writers. Special articles also were prepared for This Week and Parade on compulsory retirement and the cost of medical care, respectively.

RADIO-TELEVISION-MOTION PICTURES

Increased Liaison.—As part of the general expansion of the Division, a full-time staff man was employed to serve as liaison between the Association and the television, radio and motion picture industries. Early in the period, assistance provided to broadcasting representatives was limited; towards the end of the period, requests were handled at an average of 20 a week.

Liaison was established with producers of "Monitor" and discussions were held for presentation of medical features on this program. In cooperation with the Committee on Hypnosis, advice was given for the Armstrong Circle Theatre production of "Prescription Hypnosis." A one-minute film on amphetamines was released simultaneously with the press conference on the report of the Committee on Amphetamines and Athletics. Background film footage on the GP of the Year was released to TV stations to tie in with his selection at the Clinical Session.

Advisory Committee.—The Physicians Advisory Committee on Television, Radio and Motion Pictures, which entered its fourth year of operation, was very active in helping to assure accurate dissemination of medical facts in the audio and visual media.

Maintaining liaison with producers in both Hollywood and New York, the Committee and its staff supplied help to writers and continuity clearance men an average of 10 times a week. This assistance ranged from checking medical facts for accuracy via telephone to reviewing complete television scripts. The Committee assisted all three networks—ABC, NBC and CBS—in both radio and television activities, working with such important programs as "Playhouse 90," "Studio One," "Armstrong Circle Theatre," "The Donna Reed Show," "The Art Linkletter Show," 'The Loretta Young Show" and "DesiLu Playhouse." The Committee was also called upon to review several movie scripts such as 20th Century Fox's "Beloved Infidel."

Current members of the Committee are:

(California)
Eugene Hoffman, M.D., *Chairman*
E. Vincent Askey, M.D.
Dudley M. Cobb, M.D.
Robert W. Gentry, M.D.
Richard O. Myers, M.D.
Marcus H. Rabwin, M.D.
James F. Regan, M.D.
Charles C. Stehly, M.D.
Edward T. Tyler, M.D.
(New York)
Gerald D. Dorman, M.D., *Co-Chairman*
Renato J. Azzari, M.D.
Henry I. Fineberg, M.D.

Radio Transcription.—During the period of this report, the Division took over radio production previously handled by the Bureau of Health Education. A series of 13 fifteen-minute programs titled "Health Magazine of the Air" which was originated by the Bureau was produced and distributed to radio stations.

A special committee of medical society public relations executives analyzed the Association's radio transcription activities and recommended a curtailment in production of fifteen-minute programs. The group recommended production of five-minute features. Work was started immediately on a series of vignettes from medical history to be called "Medical Milestones."

TV Films.—Five A. M. A. public relations films—"Even For One," "Helping Hands for Julie," "A Life to Save," "Whitehall 4-1500" and "Medicine Man"—were shown 636 times on television stations with a total viewing audience of 21,000,000.

Group Showings.—The aforementioned five films, plus "Your Doctor," also were distributed to school, church and club groups for a total of 12,285 showings to 950,000 people.

Annual and Clinical Meetings.—The Atlantic City and Minneapolis meetings received good radio and television coverage, both local and network, through regular news programs and special interviews, live and taped, and through the Bulletin of the Air series presented in cooperation with Merck, Sharp and Dohme. In addition, the annual meeting coverage included a one-minute news film clip of Dr. Orr's inaugural address, which was used by more than 225 TV stations reaching an estimated audience of well over 18,000,000 persons; a CBS Radio Network broadcast of President Eisenhower's address, and two 3-minute spots prepared for NBC Monitor.

EXHIBITS

Distribution.—The Exhibit Section distributed 425 exhibits for a total of 1,575 showing days before 96 lay groups, 35 county fairs, 23 state fairs, 23 allied health groups, 10 health fairs and six state medical society annual meetings. The section assisted the Columbus (Ohio) Health Fair with 35 exhibits and two staff members.

New Exhibits.—Twenty-two new exhibits were constructed including those on the following subjects: drinking drivers, nutrition, medical careers, A. M. A. services, mechanical quackery, standard nomenclature, aging, and immunization.

New Systems.—To improve efficiency, increase bookings and lower construction costs, the section established three new sources of supply, a working agreement with a top exhibit designer, a more practical system of construction bidding, streamlined reservation and record-keeping systems, new shipping procedures to insure on-time arrivals, a quantity exhibit structure purchasing plan to save 40 per cent in construction costs, and a new flexible exhibit catalog.

Department of Program Development

HEALTH CARE OF THE AGED

In close collaboration with the Council on Medical Service, the Committee on Aging, the A. M. A. Task Force on Aging, the Field Service Division and other units of the Communications Division, the department engaged in the following *activities:*

1. A detailed report on recent A. M. A. efforts to improve health care for the aged was prepared for the House Ways and Means Committee and also was distributed to other key persons in Congress and elsewhere.
2. Developed an over-all program for future A. M. A. activity in the field of aging, which was unanimously adopted by the task force.
3. Prepared copy for a new exhibit on aging.
4. Produced and distributed 150,000 copies of a new question and answer pamphlet on compulsory health insurance (Forand Bill).
5. Prepared special speech materials on aging for A. M. A. officials and for the Washington conference of the Joint Council to Improve the Health Care of the Aged.
6. Wrote testimony for A. M. A. witnesses before the House Ways and Means Committee and the U. S. Senate Subcommittee on Problems of the Aged and Aging.

7. Worked with state and county medical society officials on plans and publicity for a saturation speaking program to begin in late summer and to be supplemented by a special speakers' kit.

8. Assisted in preparation of an informational letter to the House Ways and Means Committee and other interested groups.

National Science Fair.—The Association participated for the fourth time in the National Science Fair, held at Hartford, Conn. in May, and presented four citations to the students with the best exhibits in the basic medical sciences. The winners received substantial nationwide publicity. They were honored at a special A. M. A. banquet for all of the 1,000 students participating in the fair. The two top award winners displayed their exhibits at the A. M. A. June meeting in Atlantic City.

Medical Careers.—The department produced "I Am a Doctor," a film for high school and college students, wrote copy for an exhibit on "Medicine As a Career" and completed the first draft of a comprehensive medical careers handbook for vocational guidance counsellors and teachers.

Medical Education.—An attractively illustrated booklet on the progress of American medical schools was prepared for distribution to participants in the Second World Conference on Medical Education.

Weight Reduction.—In cooperation with the Council on Foods and Nutrition, a new pamphlet entitled "The Healthy Way to Weigh Less" was distributed to more than 600,000 persons. It was widely used by syndicated health columnists, newspaper food editors and television and radio commentators.

Food Faddism.—Six thousand kits of materials on sound nutrition—speeches, pamphlets, films, flyers, reprints—were distributed to state and county medical societies and allied groups. More than 204,000 copies of the pamphlet, "The Merchants of Menace," were sent out.

Annual Meeting.—A promotional program including both publicity and advertising was carried out to stimulate attendance at the Atlantic City meeting. The department also handled production of the general program.

Seat Belts.—The department continued liaison activity with the National Safety Council and the U. S. Public Health Service to develop a public education campaign to stimulate the use of seat belts in automobiles.

Department of Services to Officers

Speeches.—The four staff members assisted in the preparation of 88 speeches. The bulk of these dealt with AMA policies or programs on aging, freedom of choice, medical research, medical education, third parties and medical care plans, quackery, atomedics and voluntary health insurance. Many of them were reprinted in state and county medical journals, specialty journals or non-medical publications.

Articles.—Editorial assistance was given in the preparation of four major articles: "Opportunities Ahead" for GP, "Medical Practice in 1970" for New Physician, "Report From the AMA" for Public Health Reports, and "Teamwork Is the Answer" for American Professional Pharmacist.

Statements.—Eleven special statements were written for such organizations or publications as Drug Topics, USO, American Dental Association, American Institute of Electrical Engineers and the Red Cross, and on the subjects of inflation, health care of the aged, compulsory health insurance and freedom of choice.

Inaugural Ceremony.—The Department handled general arrangements, script writing and promotion for the presidential inauguration ceremony at the annual meeting.

Daily Bulletin.—The department manager, assisted by other division staff members, served as editor of the Daily Bulletin at the Minneapolis meeting (three issues) and the Atlantic City meeting (five issues).

House of Delegates Report.—Total distribution for the roundup story on House of Delegates policy actions, which is mailed out on the final day of each annual and clinical meeting, increased from 900 at Minneapolis to 1,350 for Atlantic City. These reports also were reprinted in AMA News.

Additional Services.—The department also: assisted in the preparation of the monthly *President's Page* in JAMA; provided *press assistance* for the President on 11 speaking trips; helped arrange and coordinate *itineraries* of officers and handled a large volume of *correspondence* for the President and President-Elect.

Department of Special Services

SERVICES TO STATE AND COUNTY SOCIETIES

PR Doctor.—Six regular bimonthly issues, plus a special issue on county officers conferences and public relations conferences, were distributed to state and county medical societies. The special issue was added to the file of "PR in Action" kits. A 1958 index of the newsletter was distributed with the January issue. An index of PR Aids and Materials was assembled for distribution at the 1959 PR Institute.

PR Institute.—The 1958 annual workshop session attracted nearly 400 medical society officers, public relations chairmen and lay executives for practical discussions of social and economic changes in American life, communications techniques, outstanding PR projects and the need for "vision, valor and vitality" in medical public relations programs.

LITERATURE PRODUCTION AND COUNSELLING

New Publications.—Major new pieces were *"The Pill That Could Change America,"* an up-to-date review of socialized medicine in the world today and *"Science and Service to Humanity,"* a four-page brochure on AMA services, which was distributed to Association members and to medical societies.

Distribution.—Total distribution of printed materials, including reprints, was more than 4,500,000, the major items being: Family Health Record—1,500,000; Personal Health Information Card—1,250,000; "To All My Patients"—600,000; "The Fifth Freedom"—400,000; "Do You Like To Make Decisions?"—400,000, and "What Everyone Should Know About Doctors"—100,000.

Counselling.—A new creative counselling service, available on request to AMA departments, councils and committees, provided editorial, production and promotional assistance on 22 projects.

Evaluations.—To help eliminate duplication and improve quality, evaluation studies were being made of (1) all printed materials prepared in connection with AMA annual and clinical meetings and (2) the nearly 1,000 pamphlets, brochures and reprints turned out by all Association departments.

LIAISON WITH WOMEN'S GROUPS

Medical Assistants.—The department provided program-planning guidance and speakers for medical assistants groups; held a special half-day program at AMA headquarters for 500 women during the Chicago convention of the American Association of Medical Assistants; co-sponsored a reception for 600 convention participants; assisted in the planning of an educational seminar for the AAMA 1959 meeting; initiated a monthly news release for medical assistants bulletins; gave continuing assistance in the development of career guidance programs, and helped in the establishment of the AAMA national office in Chicago.

Woman's Auxiliary.—For the first time, the AMA Woman's Auxiliary annual meeting was provided with full-time extensive news coverage by means of advance news releases and special packets, operation of a press room at Auxiliary headquarters in Atlantic City, and follow-up informational services. A publicity evaluation revealed excellent nationwide coverage by wire services, women's page editors and syndicated women's columnists.

Other Groups.—Literature and program-planning help were given on a continuing basis to such groups as the General Federation of Women's Clubs and the National Association of Business and Professional Women.

MEMBERSHIP SERVICES

In addition to the "Science and Service to Humanity" brochure, the department also: produced a speech-and-slides package, "*The New Model AMA,*" which was used by more than 35 medical societies and by Association officials to describe AMA reorganization and current projects; initiated a many-faceted program to create a positive "*corporate image*" of the AMA; handled the *guided tour program* at Chicago headquarters, which served over 200 physicians and other visitors, and conducted a seven-week training course for new guides.

Department of Medical Motion Pictures and Television

Clinical Meeting.—Twenty-six films were shown at the Minneapolis meeting, drawing a total attendance of 2,909. Premiere showings were "Fire and Explosion Hazards from Flammable Anesthetics" and "Routine Pelvic Examination."

Annual Meeting.—The Atlantic City program included 53 films, five of which had their premiere showings. An audience of 850 attended the premiere of "Hospital Sepsis—A Communicable Disease," produced cooperatively by the AMA, American College of Surgeons and American Hospital Association, with the financial assistance of Johnson and Johnson.

New Films.—In production were a film on patient rehabilitation for the general practitioner, expected to be ready for the 1959 clinical meeting, and one on children's health examinations, being produced by the Smart Foundation in cooperation with the AMA and the American Academy of Pediatrics.

Catalogs and Reviews.—A pediatric film catalog, prepared jointly by the AMA and AAP, attracted 130 requests. A revised edition of the AMA film library catalog was distributed to medical societies and other interested groups. The department prepared and published in the AMA Journal 63 medical motion picture reviews and one illustrated review.

Film Library.—Bookings of medical films totaled 6,595, an increase of 779 over the previous year. Added to the library were 178 prints of 27 new subjects. This brings the total up to 1,132 prints of 215 subjects.

Special Activities.—The department manager organized and supervised a 60-film program for the 15th General Assembly of the *Japan Medical Congress*, attended by more than 30,000 physicians and medical students. The department made plans for an afternoon film program and a demonstration and discussion program on the use of audio-visual methods in postgraduate medical education for the *Second World Conference on Medical Education.*

Today's Health

Size, Format and Content.—To provide a greater number and variety of articles attracting public interest, Today's Health nearly doubled its editorial content during the year. The number of pages has increased from 56 to 80, with a planned expansion to 88. The inventory of articles hase been enlarged, and new ground rules covering the submission of material have been established through meetings with members of the Society of Magazine Writers and other authors. Close editorial coordination has been set up between Today's Health and the medical specialties and the American Dental Association.

Policy Coordination.—Increased effort is being made to keep the editorial content of Today's Health more closely geared to AMA policies and programs. For example, a total of eight articles appeared on the subjects of aging, freedom of choice of physician and automobile seat belts.

Promotion Efforts.—To help gain more extensive circulation in doctors' offices, the House of Delegates at Atlantic City approved the inclusion of Today's Health as a benefit of dues-paying membership and urged physicians to make the magazine available to their patients. To make writers, editors and advertisers more aware of Today's Health, complimentary copies of each issue now are sent to the Society of Magazine Writers, Advertising Club of New York, Chicago Press Club, Overseas Press Club in New York, National Press Club in Washington and to a select list of science writers and syndicated columnists.

Reprints and Pickups.—Numerous Today's Health articles have been reprinted in such publications as the Congressional Record (four times); Reader's Digest (five times), and the State Department's Russian-language magazine, America Illustrated. Four new books will incorporate material from the magazine. A total of 1,074,500 requested reprints of articles were supplied to schools, physicians and organizations. Stories based on Today's Health articles, and distributed via the press section's weekly news release, were quoted frequently by newspapers and newscasters throughout the country.

The AMA News

A Star Is Born.—The Association's newest publication, the biweekly AMA News, came out for the first time on Sept. 22, 1958. During the period of this report 21 regular issues were published. Spontaneous acceptance of the newspaper required a press run increase of 41,327 in the first two months. By June 30, 1959, circulation was 264,130, reaching more physicians than any other medical publication.

Quotes and Reprints.—Although the News is still a relatively young publication, it has been widely quoted and reprinted both here and abroad in newspapers, magazines, state and county medical journals, trade papers, hospital and health publications, chamber of commerce bulletins, pharmaceutical periodicals, college and university publications, insurance bulletins and magazines, farm journals, science and military publications and reports of U. S. congressional committees. News articles also have served as the basis for editorials, quotes in editors' personal columns, comments in nationally syndicated health columns, network radio and television commentary, regular weekly health programs for radio stations, and weekly newspaper science and medicine departments.

Commendations.—Hundreds of physicians have sent commendatory letters. Very few critical letters have been received. Several medical societies and medical journals have expressed approval of the new publication. The AMA House of Delegates at Minneapolis heartily approved and lauded the purpose, content and format of the News and recommended continuance of the publication under its present and established policies.

CONCLUSION

The work of the division is constantly expanding as it becomes not only the public relations arm of the profession but also a functioning communications service unit for the Association. The division wishes to express its appreciation to the House of Delegates, Officers and Trustees of the Association, state and county medical societies, departments and staff members at AMA Headquarters, Physicians Advisory Committee on Television, Radio and Motion Pictures and Advisory Committee to the Director of Communications, for their help and cooperation during the period of this report.

REPORT OF THE FIELD SERVICE DIVISION

The staff of the Field Service Division is composed of:
Aubrey D. Gates, *Division Director*
Reuben M. Dalbec, *Field Representative*
Glenn Gillette, *Field Representative*
Charles Johnson, *Field Representative*
Richard Nelson, *Field Representative*
Cecil Dickson, *Legislative Representative*
James W. Foristel, *Legislative Representative*
D. Harold Slater, *Legislative Representative*
R. O. Beckman, *Consultant on Aging*

The Field Service Division was created by action of the Board of Trustees in August, 1958. The following statement of purposes, objectives and functions of the Field Service Division was approved by the Executive Vice President and the Board of Trustees.

I. Purpose:

The Division of Field Service shall serve as an operational and liaison arm of the AMA with the state and local medical societies in specified activities. It shall serve in conjunction with, in support of, and as a service to all Divisions and Departments of AMA in the field as may be agreed upon by the respective directors or as may be directed by the management.

II. Objectives:

A. To further develop the spirit of teamwork between AMA and the state societies.
B. To help create among AMA members a recognition of their identity of interest with the AMA.
C. To assist in locating, cultivating, and developing a better understanding and closer working relationship with appropriate lay organizations.

III. Functions:

A. To gain and maintain the complete confidence, understanding and cooperation of the executive secretary, principal officers, and governing bodies of each state society.
B. To detect adverse criticism of the AMA, and transmit the information to the management.
C. To locate in organized medicine any points of friction, schisms, conflicts, splinter-groups, and attempt to catalyze the correction and healing of such situations.
D. To interpret and promote the services of all units of AMA to constituent societies.
E. To develop a constructive, cooperative working relationship with the members of Congress and their supporters and friends.
F. To facilitate the utilization by lay organizations of AMA resources.
G. To promote such other special activities as directed by the management.

The first undertaking was the staffing of the Division. This was accomplished after carefully surveying the field as to available talent, many interviews, and numerous discussions with the Executive Vice President and the Assistant Executive Vice President. On November 1 and 15, 1958, the four Field Representatives went on active duty. A period of orientation through the month of November and the Clinical Session in Minneapolis, was pursued in order to get as thorough an understanding of the Association, its structure, its philosophy, its services, and its management, as possible. Each of the Field Representatives was assigned twelve states. These are not located in one geographic region of the United States. For efficiency in travel they were grouped in two or three adjacent states, but located in different areas of the country. This was done to give each Field Representative an opportunity to know and be able to evaluate problems in all parts of the country, While it is acknowledged that medicine is practiced much the same in all parts of the country, the philosophic, social and economic outlook of physicians and the public is different in different areas. It is necessary for men occupying positions of this type to understand fully these variations and to interpret them to AMA staff and management.

In November and December each Field Representative visited enough states to be able to relate the services of the association to the needs of the states and to gaining better perspective of the functions that they would perform in the field.

Beginning on January 1, 1959, and continuing throughout this year, they have systematically visited the states, endeavoring to carry out the over-all purposes, objectives and functions of the Division, and have reported back to the Association in an effort to reflect problems and opportunities of serving the constituent and component Associations.

Every state has been visited by the Field Representative a minimum of three times during the year, and many of the states have been visited numerous times, depending upon situations and needs.

In addition to general representation of the Association and its services in the field, a number of special activities have been pursued. In a special effort to establish closer liaison with the American Hospital Association, we have made contacts in the states with the medical staffs and hospital administrators. Out of this, we believe, has come a climate for better cooperation between the two Associations.

In our efforts to further the Association's policy with reference to legislative activities, the Field Service Division has devoted major attention to developing a closer liaison between the Communications Division, the Law Division, the Council on Legislative Activities, the Keyman System, and the state association's executive officers and their legislative committees.

We have given concentrated assistance to some states where key members of the Congress reside in an effort to establish better liaison between the physicians and the Congress. In other states, we have worked on an extensive basis to do the same thing with all members of Congress. This has been principally in the field of providing more information to the Congressmen and better contacts with them and with others interested in medical legislation, from physicians, medical organizations, lay readers and lay organizations.

The Field Service Division has devoted a considerable amount of time to the promotion of programs such as the AMA Six Point Program for the Aged, community types of endeavors in the nursing home field, and related activities. We have called to the attention of the state associations, the opportunities for working with governors of states in setting up committees and commissions for the aged, and planning and holding state conferences on aging in 1959 and 1960. We have also worked with the states in getting physicians designated by governors to be a part of the state's delegation to the White House Conference.

The Field Representatives have worked at an expanded program of getting acquainted with many different kinds of organizations and institutions within states. Field Representatives have, for example, in certain states initiated a program of establishing new contacts between state and local medical groups, with newspaper editors, civic organizations of many types, farm organizations and women's organizations. We have not yet begun to reach the potential available in this phase of our program.

The Division has endeavored to further the specific activities resulting from Forand Task Force considerations and administrative suggestions. It has done its utmost in these initial months to further the entire program of the AMA as projected by and through the various Divisions and Departments of the Association.

The staff of this Division is appreciative of the support and cooperation it has had from the management, the several Divisions and Departments of AMA headquarters, and from the constituent and component associations and societies.

In early December 1958, the Executive Vice President directed the Division to assume responsibility for establishing Washington legislative liaison with Congress. The initial staffing function of two men in the Washington office was achieved by January 1, 1959. This staff has now been expanded to three members, who serve as the AMA's listening post and Legislative Contact Representatives.

A short-term function of the Division has been that of establishing contacts with, and making a study of, Golden Age clubs and similar types of groups of the aged. The information gained has been studied by the other Divisions of the AMA in an effort to understand attitudes of these groups, and realize opportunities to serve them better through local medical organizations.

REPORT OF THE LAW DIVISION

This report covers the activities of the Law Division from July 1, 1958, to June 30, 1959. During this period the Division has continued to operate as the coordinating agency for the legal activities of the Association. In addition the Division provided staff assistance for the Judicial Council, the Council on Legislative Activities, the Council on Constitution and Bylaws, the Committee on Medicolegal Problems and numerous other temporary committees.

Under the direction of the Executive Vice President, the Division has acted as legal adviser to the Board of Trustees and the House of Delegates as well as to the officers and executive staff of the Association. This work has involved a variety of legal problems dealing with contracts, taxes, leases, copyrights, trade marks, anti-trust law, libel, slander and insurance.

Liaison Activities

Association Work.—Each of the attorneys on the staff of the Division continued to maintain liaison with one or more of the Association's permanent councils and committees by attending meetings, assisting in the answering of correspondence, reviewing prospective programs and giving oral and written legal advice. In addition, members of the staff have attended meetings and have provided legal and administrative assistance to numerous temporary committees and subcommittees of the Association. Examples of these special committees staffed by the Director or members of the staff of the Law Division include:

American Medical Association-American Bar Association Liaison Committee
American Medical Association-American Hospital Association Liaison Committee
American Medical Association-American Bar Association Committee on Narcotic Drugs
American Medical Association-American Hospital Association Medicolegal Education Committee
Medical Disciplinary Committee
Committee to Study Political Activities
Joint Committee to Study Paramedical Areas in Relation to Medicine.

Medical Societies and Individual Physicians.—The Division has, through correspondence and personal visits, maintained contact with state and county medical societies. Representatives of the Division have on request spoken at or presented programs on medicolegal subjects at state and local medical meetings and at joint medicolegal conferences.

The staff of the Division has also staffed and explained exhibits on medical professional liability and chemical tests for intoxication at state and county medical meetings. These exhibits have been shown on eight occasions.

In an effort to keep the legal counsel and executive secretaries of the medical societies advised of current legal activities, court decisions and trends affecting medical societies and individual physicians, the Law Division has continued the publication of a newsletter identified as "The Citation." One issue a month was published during the period covered by this report.

Although a statistical record has not been kept of the number of letters received and answered there is no doubt that several thousand inquiries were handled by the Division. These letters from individual physicians, attorneys, medical societies and other organizations deal with a wide variety of problems in the medical-legal field.

Medicolegal Relations.—During the period of the report the Division has encouraged and participated in joint medicolegal conferences at the national, state and local levels. Assistance has also been provided in the negotiation of written codes of understanding between physicians and attorneys. A National Interprofessional Code was approved by the House of Delegates of the American Medical Association and the House of Delegates of the American Bar Association in June and August, 1958, respectively.

Medicolegal Symposiums.—The Division presented a third series of three regional medicolegal symposiums in March and April, 1959. More than 1,100 physicians and attorneys from forty-four states, the District of Columbia, Puerto Rico and Canada attended the meetings which were held in Washington, D. C., March 20-21, Cleveland, Ohio, April 3-4, and Salt Lake City, Utah, April 17-18.

Each was devoted to the same general topics which were:
Narcotic Addiction
Res Ipsa Loquitur in Medical Professional Liability Cases
Impartial Medical Testimony
Traumatic Neurosis
Cross-Examination of Expert Medical Witnesses
The Approach of Physicians and Attorneys to Contingent Fees

The offic [illegible] three conferences were issued in a [illegible] which was sent to all the participants [illegible] the meetings.

Preparation or Review of Published Material

The Division has continued to work closely with the editors and the staff of The Journal, Specialty Journals, Today's Health and the AMA News—preparing special articles, book reviews, news stories and editorials. Assistance has also been provided in reviewing material with possible legal implications submitted from others sources.

The following list indicates the material prepared by the Division and the dates of publication:
Follow-up Study of Fatal Penicillin Reactions—June 28, 1958
Tax Deduction of Postgraduate Education—August 16, 1958
Impartial Medical Testimony—September 6, 1958
Comments on Film Dealing with Traumatic Neurosis, "The Man Who Didn't Walk"—September 6, 1958
Tort Liability of Charitable Hospitals to Patients—October 11, 1958
Tax Deduction of Professional Entertainment Expenses—November 15, 1958
National Interprofessional Code for Physicians and Attorneys—November 22, 1958
Averting Professional Liability Actions—April 25, 1959
Liability of Governmental Hospitals for Negligence—May 30, 1959
Coverage and Exclusions of Professional Liability Insurance—June 13, 1959
Survey of Professional Liability Insurance—June 20, 1959

Special Projects of Medicolegal Significance

During the year the Division planned, developed and directed a number of projects of substantial importance to the medical profession and the Association. Some of the more important ones were:

Medicolegal Film Series.—The Division assisted in the preparation of the script and in the production of two medicolegal films. The first entitled "No Margin for Error" dealt with in-hospital medical professional liability. This film was previewed at the Mid-Winter Meeting of the American Hospital Association in Chicago in February, 1959.

The second film entitled "A Matter of Fact" presented a discussion of the coroner versus the medical examiners system. These films were the fourth and fifth in a series of six being prepared jointly by the American Medical Association and the American Bar Association with the financial assistance of the Wm. S. Merrell Company of Cincinnati.

Student Medicolegal Program.—Members of the staff of the Division participated in and helped to organize a medicolegal day for senior medical and law students from Creighton University and the University of Nebraska. The meeting was held in Omaha on February 21.

Opinion Survey of Attorneys.—In an effort to assess the opinion of the legal profession with respect to medical professional liability, medical testimony and interprofessional relations, a questionnaire was prepared and distributed to approximately 8,600 attorneys. The questionnaires were sent to the entire membership of the sections on Insurance, Judicial Administration and Criminal Law of the American Bar Association. To date a total of 5,042 usable questionnaires have been returned. This represents a 58.95% of usable responses. Information contained in the questionnaires is now being coded and tabulated. It is intended that an article will be prepared for publication in *The Journal of the American Medical Association* and the *Journal of the American Bar Association* within the next six months.

Analysis of Medical Professional Liability Insurance.—A study of the standard provisions of medical professional liability insurance policies was completed and the results published in a special article in The Journal. A survey was also made of insurance companies to determine company policy with respect to coverage in stated hypothetical situations. The results of this survey were also published in a special article in The Journal.

Medical Legislative Handbook.—A National Medical Legislative Handbook was prepared and distributed to members of the Council on Legislative Activities, state key legislative personnel and executive secretaries. Background information and the status of current legislation in the field of social security and tax legislation have also been distributed.

Political Activities.—A legal memorandum dealing with a discussion of federal laws relative to permissible political activities of individual physicians and medical societies has been prepared and distributed.

Corporate and Tax Status of County and State Medical Societies.—A survey of the corporate and tax status of the state and various county medical societies was completed during the period of this report. A full report of this survey was prepared and distributed to executive secretaries and legal counsel for state medical societies.

Medical Legislative Digest.—In May the Washington Office discontinued the preparation and distribution of the Washington Letter. Responsibility for preparing and distributing current legislative information to key legislative personnel and executive secretaries of state and county medical societies was assumed by the Council on Legislative Activities. The staff work in connection with this publication was taken over by the Law Division. The first issue of the Medical Legislative Digest was published on May 1, 1959. During the period of this report four issues of the Digest were distributed.

"Jury Deliberation" Concerning Traumatic Neurosis.—In an effort to increase the effectiveness of the film on traumatic neurosis entitled "The Man Who Didn't Walk" the staff of the Law Division prepared a taped jury deliberation. In preparing this tape recording seven juries consisting of AMA employees were shown the film and permitted to discuss, as a jury, the points which the film raised in their minds. Their deliberations were recorded and on the basis of this information a script was prepared. From this script a twenty-minute typical jury deliberation was prepared for use following the showing of the film on traumatic neurosis.

Board of Trustees Handbook.—A handbook was prepared by the staff of the Law Division for the Board of Trustees. The Handbook included the standing rules of the Board, excerpts from the Constitution and Bylaws of the Association, selected parliamentary rules of procedure and basic policy statements of the Board of Trustees.

Medicolegal Abstracts

Work is progressing toward the preparation of Volume VI of the permanent bound volumes of medicolegal abstracts which the American Medical Association has been publishing since 1925. This work entails the reading, abstracting and indexing of more than one hundred medicolegal court decisions rendered during the years 1953-1957 in addition to those already abstracted and published in JAMA during those years. This project is scheduled for completion in the near future.

As a continuing project, the Law Division has abstracted for publication in current issues of The Journal, medicolegal court decisions of general interest to the profession. The following are some of the cases which were abstracted and published during the period covered by this report.

Abandonment of Patient.—The court of appeals of Georgia (Carroll v. Griffin, 101 S.E.(2) 764) held that a surgeon who advised a patient that he would not get well until he had had surgical treatment but that he, the defendant, would not take care of him, was not guilty of abandonment in the absence of a showing that the time was critical and the need for surgery immediate.

Denial of Hospital Staff Privileges.—The district court of appeals of Florida (Dade County v. Trombly, 102 S.(2) 394) pointed out that it is not incumbent upon a municipality to maintain a hospital for the private practice of medicine and that a physician has no constitutional or statutory right to practice in a city hospital. A public hospital may make rules for admission to staff or major surgical privileges so long as they are not unreasonable, discriminatory or arbitrary in either meaning or application.

Drug Addiction.—The Supreme Court of New Jersey (State v. White 142 A.(2) 65) held that voluntary drug addiction is no defense to murder unless the addiction so prostrates the faculties as to prevent the formation of the specific intent to kill, in which latter case the crime will be murder in the second degree.

Expert Witnesses.—The court of civil appeals of Texas (Miles v. Meadows, 309 S.W.(2) 284), in a suit involving the performance of a total hysterectomy by an osteopath, permitted M.D.s to testify after a showing that the methods, training, and dangers incident to the operation in question are common to both schools of medical practice and equally recognized.

Libel.—The Supreme Court of North Carolina (Bailey v. McGill, 100 S.E.(2) 860) held that physicians who are witnesses in judicial proceedings to commit an alleged mentally disordered person for confinement, have absolute immunity from civil liability for their material and pertinent affidavits, certificates, and testimony. The plaintiff had been committed following an examination by the two defendant physicians which the plaintiff contended was hurried, superficial and inadequate. His suit for libel was dismissed.

Libel.—The appellate court of Illinois (Judge v. Rockford Memorial Hospital, 150 N.E.(2) 202) held that a letter from a director of nurses in a hospital to the Grievance Committee of a nurse's registry complaining of a nurse's conduct was not libelous since it was sent in good faith by a person having an interest and duty to send it and it was sent to a person having a proper interest in receiving it.

Libel.—The supreme court, special term, Kings County, New York (Anonymous v. Health Insurance Plan of Greater New York, 173 N.Y.S.(2) 74) held that complaints about a physician made to a board set up to hear such complaints were qualifiedly privileged but that such privilege could be destroyed by a showing of excessive publication or malice.

Medical Professional Liability.—The Supreme Court of Delaware (Christian v. Wilmington General Hospital Association, 135 A.(2) 727) emphasized that no presumption of negligence on the part of a doctor arises merely because of an unfavorable result. A sixteen-month-old infant cut her hand on a piece of glass. The fact that a tendon had been severed was not discovered until nearly three months after the accident. The evidence indicated that it is often difficult to discover a severed tendon without the cooperation of the patient and that the infant was crying and struggling. It also appeared that the tendon might have been only partially severed at the time of the original examinations and ruptured later. The court refused to apply the doctrine of res ipsa loquitur in these circumstances.

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Opinion as to Cause of Death.—The court of appeals of Alabama (McMurtrey v. State, 101 S.(2) 88) held that a staff member of the State Department of Toxicology and Criminal Investigation was qualified by study and experience to testify as an expert as to cause of death.

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Organization.—During the period between July 1, 1958 and February 9, 1959, the Division of Scientific Activities was coordinated through the office of Dr. E. B. Howard, Assistant Executive Vice President of the American Medical Association. Throughout that period, following the 1957-1958 annual report, the various councils and committees comprising the Division conducted their duly designated responsibilities with essentially no deviation from established pattern.

The current Director of the Division assumed this assignment immediately following the 55th Annual Congress on Medical Education and Licensure in February 1959. Although the first two months following this assignment necessitated clearing, as well as completing, many commitments made as Secretary of the Council on Medical Education and Hospitals, the major portion of the six months through June 30 was devoted to an effort to become familiar with the activities of the various departments, councils, committees, laboratories, etc., encompassed within the Division of Scientific Activities.

Insofar as possible, the Director has endeavored to attend scheduled meetings of the various councils and committees within the Division. So far this has included the Council on Medical Education and Hospitals, Committee on Cosmetics, Council on Foods and Nutrition, Committee on Research, Council on Scientific Assembly, Council on Mental Health, and the American Medical Education Foundation. In addition, special meetings have been held in connection with the A. M. A. Chemical Laboratory and with the Committee on Atomic Medicine and Ionizing Radiation.

There have been innumerable conferences dealing with such matters as the status of the Department of Investigation, possible changes in the format of the scientific and commercial exhibits, pharmaceutical and other advertising, possible staffing and activating of the American Medical Research Foundation, etc.

Early in this assignment it was believed that future progress might be enhanced through the medium of a conference designed to identify the current, important issues in medical education and medical science, and objectively scrutinize just what the American Medical Association has accomplished, is doing, and has projected in these areas. Consequently, in March the idea of inviting a group of fifteen to twenty outstanding physicians and scientists in allied fields to serve as an "ad hoc" advisory committee to assist in an objective analysis of this type was presented to the administration. It was believed that such a conference should be attended by members of the Board of Trustees and A. M. A. officials, as well as the chairmen and administrative officers of the various councils and committees within the Division. It was proposed, furthermore, that such a meeting be held in a quiet, pleasant environment and that it be planned to cover a two and one-half day period. Subsequent approval of this proposal by the administration and Board of Trustees made it possible to arrange for the conference to take place at Hershey, Pennsylvania, September 14-16. Since the details concerning the conference program have already been distributed, no further comment is indicated in this report. It is hoped that this conference will be a valuable experience for those who attend, and that it will assist in guiding subsequent thinking and planning as to how A. M. A.'s scientific activities may be of greatest possible value to the profession in the future.

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  Dr. Walter S. Wiggins appointed as Secretary
  Dr. Arthur S. Cain appointed as Associate Secretary (to begin duties in October)

Dr. George H. Miller appointed (part-time) to field staff
Dr. Winchell Craig appointed (part-time) to field staff
Dr. William Fellows appointed (part-time) to field staff

B–Department of Therapy and Research

Dr. Robert T. Stormont, director, resignation as of September 1
Dr. John H. Ballin, assigned as Acting Chairman of Advertising Committee
Dr. John Hefferren, resignation from Chemical Laboratory staff to become director of ADA Chemical Laboratory

C–Council on Scientific Assembly

Dr. Charles H. Bramlitt appointed as Secretary to succeed Dr. Thomas Hull, currently acting as Secretary until Dr. Hull's retirement on January 1, 1960

D–Council on Mental Health

Dr. Richard J. Plunkett reassigned as full-time Secretary

The resignation of Dr. Stormont necessitated reconsideration of the organizational structure of the Department of Therapy and Research. In order to bring about the necessary direct interplay between the secretaries of the various councils and committees with the office of the Division Director, it was recommended that the position of Director of the Department of Therapy and Research be eliminated. Eventual administrative reorganization within the Division will reduce the number of staff administrative officers reporting to the Division Director.

The role played by Dr. Stormont as Chairman of the Advertising Committee has been assigned to Dr. John Ballin. A completely new set of "Principles" related to A. M. A. advertising is currently being developed by a committee representing the Business Division as well as the Division of Scientific Activities. Following clearance with the Law Division, these advertising principles will be presented to the administration with a recommendation for their adoption. It is hoped that both the American Medical Association and the Pharmaceutical Manufacturers Association will cooperate in the establishment of these as sound, mutually acceptable working principles, as far as advertising is concerned.

There are certain facets of the Division of Scientific Activities which merit special consideration during the period ahead. Some of these matters impinge upon activities of other divisions and necessitate thoughtful, cooperative approaches seeking adequate solutions. For example, the concern of the Committees on Toxicology and Pesticides includes interests common also to the Council on Industrial Health. Furthermore, there are gaps in the general field of environmental hazards not encompassed by any current aspect of A. M. A. organization. This example emphasizes the need for broadening the scope of concern through the development of an organizational structure covering the general field of public health, in which areas of interest such as these may be appropriately coordinated. Such a development would result in strengthening potential achievement and eliminating much of the duplication of effort that currently may be involved.

Similar problems are encountered in connection with the activities of the Committee on Research. While it is true that this Committee was given rather broad functions at the time of its reorganization in 1950, its activities have remained circumscribed. This has probably been due to the organizational structure whereby it did not function as a general committee on research, but as a subcommittee of the Council on Drugs. It may well be that there should be a Committee on Research within each of the divisions where such activities are being conducted. In such instances, the committee should be representative of the broad interests within the division. However, one of the most imperative needs in the projection of research for the American Medical Association is the development of a strong committee on research representing all fields of its concern (education, science, socio-economic, legal, etc.).

Last November (1958) the Board of Trustees voted that the activities of the Committee on Cosmetics be absorbed by the Council on Drugs, and that the Committee be terminated as of December 1959. Following receipt of this information, the Committee on Cosmetics requested reconsideration. The Board of Trustees in February (1959) referred the matter to its Committee on Scientific Activities which has the matter under study.

The Department of Investigation has served a useful role over the years and conducts a type of activity that has been of value to the profession and to the public. Its functions are investigation and education. Its investigative functions are primarily associated with quackery in the field of diagnosis and therapy, but in toto encompass the broad field of quackery and imposture in the field of healing arts. Its educational functions are directed to the profession and to the public. Its potential legal entanglements are of genuine concern. This is, again, an area that transcends the divisional lines (scientific, socio-economic, legal, communications). A task force has recommended that this department be directly responsible to the Director of the Division of Socio-Economic Activities and that its educational efforts be allied to those of the Department of Health Education.

During the past year, the American Medical Education Foundation has continued to make progress in further enlarging the number of contributors and in the total funds obtained through its efforts. If it had accomplished nothing else during its period of existence than the creation of awareness within the profession of the financial problems of medical education, the American Medical Education Foundation would have justified its existence. Actually, it has accomplished far more. It has stimulated the development of alumni giving in many schools where little or none existed previously. It has aided in public education. It has helped in improving medical school-professional liaison in many areas. Some of its contributions must be classified as intangibles that are existent but difficult to define.

The Council on Medical Education and Hospitals faces constantly increasing challenges in every aspect of its activities. Its staff nucleus was temporarily depleted as result of administrative reorganization (Turner, Wiggins, etc.) and is currently carrying a very heavy burden. The administrative readjustments have necessitated delay and reorientation of certain aspects of the Council's work, notably the "on location" studies in the field of continuing medical education. The arrival of Dr. Arthur Cain in October will help to overcome this situation.

The additional responsibilities involved in staffing the Committee on Nursing, and the Committee on Relations Between Medicine and Allied (Paramedical) Areas have loaded this Council staff almost to the point of no return. It is to be hoped that decision will be reached in the near future which will make it possible to bring in additional qualified personnel to undertake major staffing responsibilities in both of these areas. This Council and its staff are eager to seriously reevaluate their past, current and projected activities with the hope of determining their most effective role in the period ahead.

In the previous paragraphs I have endeavored to give a brief picture of the Division of Scientific Activities and its current role as I have seen it during the period of February 1 through June 30. This has been a broad generalization through which I have endeavored to indicate that the division represents a heterogeneous group of activities, presenting many interesting problems and challenges. It is obvious that solutions to them involve long range planning, cooperation, diplomacy and common-sense. It will necessitate improved, coordinated thinking and planning and will involve a broad educational approach in which the central objective becomes A. M. A., rather than its segments.

I have also endeavored to convey my belief that in the period ahead there should be major reorganization of some of the components comprising the Division. We are not physician made to a board set up to hear such complaints were qualifiedly privileged but that such privilege could be destroyed by a showing of excessive publication or malice.

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B–Department of Therapy and Research
Dr. Robert T. Stormont, director, resignation as of September 1
Dr. John H. Ballin, assigned as Acting Chairman of Advertising Committee
Dr. John Hefferren, resignation from Chemical Laboratory staff to become director of ADA Chemical Laboratory

C–Council on Scientific Assembly
Dr. Charles H. Bramlitt appointed as Secretary to succeed Dr. Thomas Hull, currently acting as Secretary until Dr. Hull's retirement on January 1, 1960

D–Council on Mental Health
Dr. Richard J. Plunkett reassigned as full-time Secretary

The resignation of Dr. Stormont necessitated reconsideration of the organizational structure of the Department of Therapy and Research. In order to bring about the necessary direct interplay between the secretaries of the various councils and committees with the office of the Division Director, it was recommended that the position of Director of the Department of Therapy and Research be eliminated. Eventual administrative reorganization within the Division will reduce the number of staff administrative officers reporting to the Division Director.

The role played by Dr. Stormont as Chairman of the Advertising Committee has been assigned to Dr. John Ballin. A completely new set of "Principles" related to A. M. A. advertising is currently being developed by a committee representing the Business Division as well as the Division of Scientific Activities. Following clearance with the Law Division, these advertising principles will be presented to the administration with a recommendation for their adoption. It is hoped that both the American Medical Association and the Pharmaceutical Manufacturers Association will cooperate in the establishment of these as sound, mutually acceptable working principles, as far as advertising is concerned.

There are certain facets of the Division of Scientific Activities which merit special consideration during the period ahead. Some of these matters impinge upon activities of other divisions and necessitate thoughtful, cooperative approaches seeking adequate solutions. For example, the concern of the Committees on Toxicology and Pesticides includes interests common also to the Council on Industrial Health. Furthermore, there are gaps in the general field of environmental hazards not encompassed by any current aspect of A. M. A. organization. This example emphasizes the need for broadening the scope of concern through the development of an organizational structure covering the general field of public health, in which areas of interest such as these may be appropriately coordinated. Such a development would result in strengthening potential achievement and eliminating much of the duplication of effort that currently may be involved.

Similar problems are encountered in connection with the activities of the Committee on Research. While it is true that this Committee was given rather broad functions at the time of its reorganization in 1950, its activities have remained circumscribed. This has probably been due to the organizational structure whereby it did not function as a general committee on research, but as a subcommittee of the Council on Drugs. It may well be that there should be a Committee on Research within each of the divisions where such activities are being conducted. In such instances, the committee should be representative of the broad interests within the division. However, one of the most imperative needs in the projection of research for the American Medical Association is the development of a strong committee on research representing all fields of its concern (education, science, socio-economic, legal, etc.).

Last November (1958) the Board of Trustees voted that the activities of the Committee on Cosmetics be absorbed by the Council on Drugs, and that the Committee be terminated as of December 1959. Following receipt of this information, the Committee on Cosmetics requested reconsideration. The Board of Trustees in February (1959) referred the matter to its Committee on Scientific Activities which has the matter under study.

The Department of Investigation has served a useful role over the years and conducts a type of activity that has been of value to the profession and to the public. Its functions are investigation and education. Its investigative functions are primarily associated with quackery in the field of diagnosis and therapy, but in toto encompass the broad field of quackery and imposture in the field of healing arts. Its educational functions are directed to the profession and to the public. Its potential legal entanglements are of genuine concern. This is, again, an area that transcends the divisional lines (scientific, socio-economic, legal, communications). A task force has recommended that this department be directly responsible to the Director of the Division of Socio-Economic Activities and that its educational efforts be allied to those of the Department of Health Education.

During the past year, the American Medical Education Foundation has continued to make progress in further enlarging the number of contributors and in the total funds obtained through its efforts. If it had accomplished nothing else during its period of existence than the creation of awareness within the profession of the financial problems of medical education, the American Medical Education Foundation would have justified its existence. Actually, it has accomplished far more. It has stimulated the development of alumni giving in many schools where little or none existed previously. It has aided in public education. It has helped in improving medical school-professional liaison in many areas. Some of its contributions must be classified as intangibles that are existent but difficult to define.

The Council on Medical Education and Hospitals faces constantly increasing challenges in every aspect of its activities. Its staff nucleus was temporarily depleted as result of administrative reorganization (Turner, Wiggins, etc.) and is currently carrying a very heavy burden. The administrative readjustments have necessitated delay and reorientation of certain aspects of the Council's work, notably the "on location" studies in the field of continuing medical education. The arrival of Dr. Arthur Cain in October will help to overcome this situation.

The additional responsibilities involved in staffing the Committee on Nursing, and the Committee on Relations Between Medicine and Allied (Paramedical) Areas have loaded this Council staff almost to the point of no return. It is to be hoped that decision will be reached in the near future which will make it possible to bring in additional qualified personnel to undertake major staffing responsibilities in both of these areas. This Council and its staff are eager to seriously reevaluate their past, current and projected activities with the hope of determining their most effective role in the period ahead.

In the previous paragraphs I have endeavored to give a brief picture of the Division of Scientific Activities and its current role as I have seen it during the period of February 1 through June 30. This has been a broad generalization through which I have endeavored to indicate that the division represents a heterogeneous group of activities, presenting many interesting problems and challenges. It is obvious that solutions to them involve long range planning, cooperation, diplomacy and common-sense. It will necessitate improved, coordinated thinking and planning and will involve a broad educational approach in which the central objective becomes A. M. A., rather than its segments.

I have also endeavored to convey my belief that in the period ahead there should be major reorganization of some of the components comprising the Division. We are not, adequately fulfilling needs in some areas. Some segments may well be incorporated into new, broader areas. Some probably should be eliminated, or materially modified. New tasks may necessitate materially altered framework. In other words, there is a task to be done that will demand leadership, teamwork, understanding and a lot of work, and it will not be easy.

In addition to attempting to understand the implications of the assignment as Director of the Division of Scientific Activities, I have continued to follow through on a number of commitments of liaison nature, all with administrative sanction. These include:

A—Membership on the advisory groups of The Surgeon General (P. H. S.) on Needs in Medical Education, and active participation in the Steering Committee for this study
B—Consultant to the Education and Training Division of the office of The Surgeon General (U. S. A.)
C—Consultant on Education and Training Programs of the Office of Vocational Rehabilitation
D—Participant in conferences on problems in connection with development of medical school and teaching hospital programs with the State University of New York (Brooklyn Division), and the University of Colorado
E—Medical advisory committee on education and training grants of the National Foundation
F—Advisory Committee to the National Fund for Medical Education
G—Secretary-Treasurer and Chairman of the Executive Committee of the American Medical Education Foundation
H—A. M. A. representative on the National Academy of Sciences, etc.
I—Medical Advisory Committee, W. K. Kellogg Foundation
J—Medical Advisory Committee to Western Interstate Commission on Higher Education
K—Member Commission on Survey of Dental Education (Educational Advisory Committee) of the American Council on Education

I wish to express my very deep appreciation for the cooperation which my colleagues in the Division of Scientific Activities have given to me during this period since I have undertaken this new assignment. It is my sincere hope that with their further cooperation and support it will be possible to project a constructive period ahead and that next year's report may indicate at least partial solutions to some of the many challenges and problems within the Division.

Respectfully submitted,
Edward L. Turner, M.D., *Director*
Division of Scientific Activities

REPORT OF THE DEPARTMENT OF THERAPY AND RESEARCH

The various groups within the Department have constantly endeavored to expand their activities and improve their programs of operation with the view of rendering a better service to the medical profession and also the public. The development of new drugs and other new potential aids for the diagnosis, prevention, and treatment of disease has continued to proceed with constantly increasing rapidity. In order to meet this challenge the evaluation of data or evidence and the publication of concise and authoritative scientific reports has been increased significantly. The Director of the Department has endeavored to exercise general supervision over the heads of the various sub-departments and has frequently advised or directed them regarding the best way of handling important problems or matters relating to basic policies.

The Director of the Department has continued to serve as Chairman of the Advertising Committee for the scientific publications of the A. M. A. In this capacity he has had the responsibility of making certain that all proposed advertising copy for these publications is screened in order to insure compliance with the A. M. A. principles governing advertising. The task of determining the eligibility of products for advertising has often been tedious and difficult, particularly when the findings of various clinical studies were in conflict. Products that were of unestablished therapeutic value have been ruled ineligible. Likewise, irrational or "shotgun" mixtures of drugs have been rejected for advertising. A considerable amount of time has been spent in making deletions or appropriate revisions of proposed claims or statements which were judged to be in violation of our governing principles. Every effort has been made during the past year to continue the established policy of being as fair and consistent as possible in screening all proposed advertising copy and of maintaining our standards at as high a level as is both possible and practicable.

REPORT OF THE DEPARTMENT OF INVESTIGATION

During the reporting year ended June 30, 1959, the Dept. of Investigation received written inquiries on approximately 4,600 subjects. (The Dept. maintains files of information on quacks, nostrums, and other phases of pseudo-medicine.) No record has been kept of the number of telephone inquiries, or of the time spent in answering or discussing these subjects in utilizing this medium of communication.

Cancer "cures" remained the No. 1 subject of interest. More than 500 inquiries were received on such treatments during the year. Vitamin and mineral products continued in second place, while inquiries on the many gadgets and devices were in third place. A growing interest in the activities of the cultists placed them ahead of reducing preparations, for some reason, although it is true that inquiries on the latter subject are seasonal. Some of the gadgets, such as the vibrators and the electrical "muscle stimulators," may, however, be categorized as "reducers." Arthritis and rheumatism "cures" were next as a subject of inquiries.

Of significance was the imprisonment of Dr. Robert H. Reddick of Baltimore who was trafficking in homeopathic licenses in Maryland.

The reporting year witnessed also an almost complete disappearance of interest in such "rejuvenators" as Pega Palo, Royal Jelly, and the "sicca-cell" therapy which was supposed to have rejuvenated several prominent persons. An increased interest in rejuvenation, however, resulted from the publicity in a popular magazine (*Coronet*, December 1958) for something involving the parenteral use of procaine hydrochloride as a geriatric panacea.

Of more interest, perhaps, are the recurring invitations to the Director to address lay groups on the subject of medical quackery. A recounting indicates that talks were made on this subject from coast to coast, addressing both medical and lay groups. The total number of speeches was 50, and the groups ranged in size from more than 400 to less than 50. In addition, a former staff assistant, now employed by the Los Angeles County Medical Association, addressed a number of groups in his immediate area on the same interesting and informative subject. Dr. Louis M. Orr, President of the American Medical Association, also gave several talks on quackery and utilized the kit of "props," which includes actual gadgets and bottles and boxes of "patent medicines" which have been sold under false and misleading claims.

In addition to the speeches, six radio interviews and four television appearances were made by the Director during the year. There was also the manning of the exhibit on "Mechanical Quackery" at the Green County Fair in Monroe, Wis., the Pennsylvania Farm Show at Harrisburg, Pa., and the Columbus Health Fair at Columbus, Ohio.

The Director attended meetings of the Committee on New or Unproved Methods of Treatment of the American Cancer Society in New York and Boston, and the annual meeting of the Illinois Division of that Society in Chicago, and participated in meetings of the Public Relations Institute and the Ohio State Medical Association.

One report was accepted for publication in THE JOURNAL of the American Medical Association.

REPORT OF THE CHEMICAL LABORATORY

During the first seven months of this past year the major portion of the time of the laboratory staff was spent on the establishment of tests and assays for nonofficial drugs. These tests and assays, established in cooperation with pharmaceutical firms, represent an expression of opinion as to what might constitute adequate tests for these drugs. Monographs for the following drugs have appeared in "Drug Standards" this year: aminopentamide sulfate, chloroprocaine hydrochloride, decamethonium bromide, heptabarbital, hydrocortisone cyclopentylpropionate, mephenesin carbamate, penthienate bromide, phensuximide, piperazine calcium edathamil, procyclidine hydrochloride, pyrimethamine, pyrrobutamine phosphate, sitosterols, and tetrahydrozaline hydrochloride. In addition, monographs were also completed on chlorisondamine, dyclonine hydrochloride, methylphenidate hydrochloride, phenmetrazine hydrochloride, pipenzolate methylbromide, piperidolate hydrochloride, promazine hydrochloride and promoxolane.

During this past year, at the request of the American Medical Association, an Ad Hoc Committee met at A. M. A. headquarters to study and discuss the drug standards program of the Chemical Laboratory. Representatives of the Food and Drug Administration, the United States Pharmacopeia, the National Formulary, the pharmaceutical industry and the medical profession took part. The discussion centered around the desirability, necessity and responsibility of the A. M. A. laboratory in drug standardization. The purpose was to obtain a clearer and broader understanding of this problem.

A study was made on the *in vitro* determination of the rate of release of sustained release medication products of various manufacturers. The results were published in "Drug Standards" (27:1-6 (Jan.-Feb.) 1959). Some preliminary work also was done on attempting to correlate the *in vitro* with the *in vivo* release of sustained release medication.

Work continued on the coding of solid dosage forms of drugs for the "Drug Identification Guide." This scheme, based on the physical characteristics of the solid drug form, was developed to assist in the rapid identification of drugs which are available on the market, and was described in THE JOURNAL (160:479-484 (Jan. 31) 1959). About 2,000 drugs have been coded. Some preliminary studies have been undertaken to determine whether or not it is feasible to code suppositories in a similar manner. In cooperation with the Communications Division an exhibit on the identification guide is being prepared for showing at A. M. A. meetings.

Slightly more than a year ago arrangements were completed with the College of American Pathologists for the use of the facilities and personnel of the Chemical Laboratory for a certification program which the College of American Pathologists is carrying out on hemoglobin standards. Progress along these lines had been relatively slow because of difficulties of instrument standardization. These difficulties have now been largely resolved through cooperative efforts with the College and some of the firms that will market the hemoglobin standards. Samples of the hemoglobin standards manufactured by various firms have been picked up on the open market and checked by the laboratory. We have also checked samples submitted by the Department of National Health and Welfare of Canada.

A project was started to develop a library of ultraviolet and infrared curves of drugs. These curves would be of great value in drug identification work, since they represent one of the best means of drug identification available today.

The laboratory undertook some examinations at the request of groups within the A. M. A. and certain outside agencies. Among these were the identification of some components of blood extractives, a new brand of cigarettes was tested for nicotine and tar content, and a highly advertised delayed release tablet was checked for both contents and its release characteristics.

Dr. John J. Hefferren of the Chemical Laboratory staff has left to assume directorship of the American Dental Association Laboratory.

Laboratory work was severely curtailed in January when it became necessary to move the Division Library into the laboratory because of construction in the office area. In February it became necessary to vacate certain laboratory areas and to move the secretarial personnel into other parts of the laboratory and bench work became impossible.

The time away from the bench was used to start a file on drugs currently on the market or under investigation in order to have a ready reference for the many queries on these products coming from the Editorial Department, Council on Drugs and various outside agencies. Files are being prepared on drugs by trade name, generic name, empirical formula, general chemical category and therapeutic use.

The Laboratory cooperated with various Councils and Divisions within the A. M. A. Considerable time was spent on various aspects of drug nomenclature. All of the structural formulae for drugs which appear in New and Nonofficial Drugs and in drug monographs which appear in THE JOURNAL were drawn by the laboratory. Many of the drug structures needed for other papers published by the A. M. A. were also drawn by the laboratory staff. The laboratory frequently was consulted by the editorial staff concerning the accuracy of chemical statements and nomenclature in articles to be published in A. M. A. journals.

The laboratory staff also was consulted by A. M. A. departments to advise on classification of entries of chemical and pharmaceutical interest for both Quarterly Cumulative Index Medicus and THE JOURNAL. They also advised the Advertising Committee of the A. M. A. with respect to advertising copy containing statements of a chemical nature. Other services to departments within the A. M. A. were concerned with reviewing of articles proposed for publication in THE JOURNAL, answering queries for the Questions and Answers column in THE JOURNAL and reviewing books for THE JOURNAL.

REPORT OF THE DIVISION OF SCIENTIFIC PUBLICATIONS

The Division of Scientific Publications comprises the following four departments:

1. THE JOURNAL of the American Medical Association
2. The A. M. A. Specialty Journals
3. The A. M. A. Library and Quarterly Cumulative Index Medicus
4. The Standard Nomenclature of Diseases and Operations

The reorganization of these departments into a Division became effective in August, 1958, following the approval of the Board of Trustees.

A new departure related to this Division has been the privilege of meeting with the Committee on Scientific Activities of the Board of Trustees to consider important problems related to the four departments. The programs of all of these areas, which were most favorably affected by this action of the Board, are described in detail in another section of the Board report.

The Journal

The period under review, ending June 30, 1959, was the 76th year in the life of THE JOURNAL. In readership and in the average size of each issue, THE JOURNAL continues to grow. Through the years its influence has expanded until now it is read throughout the United States and in 119 other countries.

The editorial material during the year averaged 136.5 pages per issue, which exceeded that of the previous year and was accounted for in part by 662 original articles, special articles and reports, clinical notes, and diagnostic problems. In accordance with the Board of Trustees requirment that the editorial pages at least equal the number of advertising pages, the former exceeded the latter for the year by 332 pages. A specially designed and beautifully illustrated issue was published July 12, 1958, marking the 75th anniversary of THE JOURNAL. An unusual feature of the Anniversary Issue was that most of the contributors were not physicians but industrialists, educators, scientists, news commentators, and writers. THE JOURNAL also published on January 17, 1959, in addition to the regular weekly issues, a 96-page Special Edition comprising the Report of the Commission on Medical Care Plans.

Realizing the increasing importance of discoveries in biochemistry and genetics to the practice of medicine, a successful effort was made to find a biochemist who was also a doctor of medicine, who would prepare editorials to point up the relation of these discoveries to the physician's every-day work. The first editorial in this series appeared in the August 8, 1959, issue.

Two new columns have been introduced among the advertising pages, one entitled "Customs and Idioms," the other "Medical Beliefs of Yesterday." While these columns were started late in the year, they already seem to be well received.

The U. S. Post Office Department has required THE JOURNAL, as it has of other publications, to number the pages in each issue consecutively from the first advertising page on through the editorial matter to the last advertising page in the back. Therefore, beginning January 3, 1959, the pagination in the editorial section has included two sets of numbers separated by a diagonal. The number on the left meets the Post Office Department's requirement, and the one in bold face type on the right side of the diagonal indicates the page number within the volume of THE JOURNAL.

At the Annual Meeting in Atlantic City in June the Board of Trustees directed that THE JOURNAL be sent to all dues-paying members of the Association, whereas formerly such members could choose to receive as a part of the benefit of membership either THE JOURNAL or one Specialty Journal. It is estimated that this new arrangement will increase the number of subscribers to THE JOURNAL by about 18,500.

A change has been made on the cover of THE JOURNAL under New and Nonofficial Drugs to list both the generic and trade names of drugs.

On December 15, 1958, Dr. Austin Smith, who had been Editor of THE JOURNAL for nine years, resigned and later accepted the presidency of the Pharmaceutical Manufacturers Association. Dr. Smith was succeeded by Dr. Johnson F. Hammond, who had been a member of THE JOURNAL staff for many years. Dr. Theodore Johnson, a medical practitioner in Ogden, Utah, joined the staff of THE JOURNAL, as an assistant editor, on June 1, 1959.

Medical Literature Abstracts.—About 2,600 articles have been abstracted by THE JOURNAL'S Current Medical Literature Department during the year, and 80 pages of abstracts as an average have been published each month. These are taken from about 80 different journals, both foreign and domestic.

Medical News.—The News Department published 1,847 news items, representing each of the 50 states of our country and many foreign countries. It also prepared for THE JOURNAL 3,411 obituary notices. The News Department now prepares the list of "Meetings" for THE JOURNAL as well as the list of "National Organizations of Medical Interest."

Questions and Answers.—Questions from 2,400 physicians were answered by replies from consultants or reference material from the Library. Of these questions and answers 614 were selected for publication in THE JOURNAL.

Medicine at Work.—Beginning with the October 11, 1958, issue of THE JOURNAL, when Medicine at Work was transformed from a single magazine-length feature article to a separate section of THE JOURNAL, the impact of this presentation has exceeded expectations. This material is read more widely now within the profession than at any time since Medicine at Work first began to attract readers in September, 1956. In August, 1958, for example, U. S. Senator Bricker introduced into the Congressional Record the full text of the 3,000 word Medicine at Work article entitled "World Medicine Comes of Age." *The Reader's Digest*, which published two previous Medicine at Work articles and quoted liberally from a third, is considering condensation of the alcoholism report "Robber of Five Million Brains" (J. A. M. A., July 19, 1958). That article has been republished in several medical and lay journals, including *Best Articles & Stories*. Several other reports from the section are listed as "required reading" in a number of medical schools.

In the past year Medicine at Work published a total of 156 reports gathered on a highly selective basis. There were 4[illegible] illustrations, including 13 taken by staff members. These reports dealt with mental health in industry, space medicine, research, snowstorms, aging, medical and health museums, medical education, etc. The report on the danger of plastic garment bags in the hands of children (J. A. M. A. April 25, 1959) created more immediate response from the profession and the public than did any other previous Medicine at Work product. The reaction to that story—extending to network television and radio, national magazines, and more than 2,000 newspapers—was such that *The Quill*, official publication of Sigma Delta Chi, professional journalistic fraternity, published a dramatic genesis of the plastic bags story and commented editorially on its impact in helping to save the lives of children.

In pursuing the objective of publishing, in highly readable form, only reports which portray medicine working with other disciplines to approach specific health situations, the two staff members attended more than 24 meetings of the A. M. A. and other organizations in Chicago and elsewhere. The primary aim continues to be accumulation of background knowledge and the cultivation of sources. In most cases manuscripts are previewed by these sources in person-to-person contact.

In the coming year there will be slight changes designed to improve layout and typography without radically departing from the previously established image. Also anticipated are several new format techniques to further enhance readability and interest.

A. M. A. Specialty Journals

A comparative study has been made with competing specialty publications, out of which have been developed recommendations for improving the A. M. A. Specialty Journals. Much attention has been devoted to new policy adopted by the Board of Trustees. This policy sharpens the focus on the purpose of each A. M. A. Specialty Journal and the service each should render within its field. It makes wider dissemination of published literature possible as benefit of membership. It increases the opportunity for greater numbers of A. M. A. members to serve in an editorial capacity. It makes it possible for a recognized specialized society to join with the A. M. A. in co-sponsoring a specialty journal whose purpose parallels that of the society. Such editorial co-sponsorship will identify the specialized society with the journal, will provide for society representation on the editorial board, and will acknowledge such representation to hold the same qualifications, responsibilities, and privileges as all A. M. A. representatives.

The regular schedule of the A. M. A. Specialty Journals was supplemented by the publication of two special reports as Part II of the monthly issue. One supplement appeared with the Archives of Ophthalmology and the other with the Journal of Diseases of Children.

Several regular issues were of special significance. All papers read on the 1958 program of the Section on Ophthalmology appeared in one issue of the Archives of Ophthalmology. Selected papers read on the 1958 program of the Section on Internal Medicine and the Section on Experimental Medicine and Therapeutics appeared in one issue of the Archives of Internal Medicine. An issue of the Archives of Pathology was dedicated to Dr. Shields Warren with contributions from his many colleagues and students.

The editorial boards of the A. M. A. Specialty Journals are rendering an important service in soliciting special reports, and in offering the pages of their journals to feature symposiums, conferences and panel discussions of particular significance.

The Journal of Diseases of Children cooperated with the Society of Pediatric Research by offering its editorial and production facilities in printing the abstract program for the Annual Meeting of the Society. These abstracts will be published with discussions in a future issue of the Journal of Diseases of Children.

Another important step was the division of the Archives of Neurology and Psychiatry into two journals. This division became effective with the July, 1959, issues with the introduction of the Archives of Neurology and the Archives of General Psychiatry.

Despite the rate of manuscript rejection, practically all A. M. A. Specialty Journals have an abundant supply of articles. Several journals have increased the number of text pages to accommodate quality articles, both solicited and voluntarily contributed. This situation attests to the high standard of quality attributed to these A. M. A. publications.

Library

Although the work of the Library especially has been handicapped by reconstruction operations on the headquarters building, the reference section processed 3,035 requests, 2,088 were answered by loaning package libraries, 822 of them requiring search of reference sources, and 125 requests were referred to other departments for reply.

Among the telephone requests during April only (aside from those which could be answered directly) were 197 which required a total of 34 hours to handle. Of these, 79 originated in other departments at headquarters; 22 came from other professional organizations, 25 from librarians, 21 from physicians, 10 from industrial concerns, 12 from publishing houses, 27 from laymen, and one from a lawyer.

Periodical loans totaled 8,646 of which 2,042 were house loans and 6,604 were sent outside the building. Of the latter, 2,655 were included in package libraries.

A survey of 8,940 periodical titles loaned in the past two years shows that 6,723 were English-language and 1,943 foreign-language journals. The Library does not loan A. M. A. publications, but 164 J. A. M. A. reprints were mailed in answer to requests.

There were 262 volumes added to the Library book collection and 83 withdrawn. This gain of 179 items brings the total collection to 4,500. On the basis of a four months' count, about 20,000 reprints, tear-sheets, etc., were processed for the Package Library files this year.

The Library prepared indexes for the three volumes of The Journal and listed 1,533 publications for the Books Received column. Fifty-four domestic and 100 foreign periodical titles not previously received reached the Library; sixty-three were new publications.

Two members of the Library staff presented papers at a workshop on medical writing during the American Medical Writers' Association annual meeting in September. The reference librarian attended the meeting of the Medical Library Association in June.

The Library is preparing a list of basic books and periodicals as a guide for librarians and physicians who serve on medical library committees. Only the final editing of this pamphlet remains to be completed.

While the aim of the library is to serve the members of the A. M. A. and the headquarters staff, it also helps other individuals and organizations who turn to the Association for information in the field of medicine.

Quarterly Cumulative Index Medicus

Volumes 59 and 60 of the Quarterly Cumulative Index Medicus were published and mailed to subscribers during the year. In the two volumes, 62,717 articles were indexed, for a total of 225,375 subject and author entries.

With the decision of the Board of Trustees to discontinue the Quarterly Cumulative Index Medicus, the work on publication of Volume 61 and subsequent volumes was halted. The more than one-half million cards that were in process have been assembled and will be available for reference work. Periods covered by the material in these files are January, 1957, through early 1959 for English-language journals and January, 1957, through June, 1958, for the foreign-language journals.

Every effort has been made to find employment for the twenty-seven members of the Index staff. Fifteen have been permanently relocated in other departments at A. M. A. headquarters; three are temporarily assigned; and three have transferred to other organizations in the city. Four left voluntarily, one to retire, one to be married, and two others because it was impossible to place them to their satisfaction.

Standard Nomenclature of Diseases and Operations

Progress in medical knowledge has been furthered by the use of the Standard Nomenclature of Diseases and Operations as a clinical disease index. The nomenclature is a most valuable tool in research. The many Standard Nomenclature committees have worked toward completion of the fifth edition of the Nomenclature, which is expected to go to the printer January 1, 1960.

After submission of the manuscript of the fifth edition, reappointment of consulting committees for the sixth edition will be made by the newly appointed Editorial Advisory Board.

About 6,000 inquiries have been answered by letter by the editors this past year. The Nomenclature is being used extensively in doctors' offices, medical clinics, pathology departments, and in many other places.

By the end of the present calendar year, 17 institutes on the Standard Nomenclature of Diseases and Operations will have been held in various sections of the United States. Enrollment has necessarily been limited to 125 students per institute, and at every institute the requests for enrollment have far exceeded that number. Nearly 1,900 students in all have been given concentrated courses on the Standard Nomenclature of Diseases and Operations. Institutes have been planned ahead through 1964.

The Standard Nomenclature Department presented an exhibit at the Annual Meeting of the American Medical Association in Atlantic City in June, 1959, and contemplated exhibits for the American Hospital Association in August, the Second World Conference on Medical Education in August, and the American Association of Medical Record Librarians in October, 1959. An invitation has been received for an exhibit at the meeting of the American Association of Anesthesiologists. A new exhibit on the Uses and Values of the Nomenclature has been completed and shown on one occasion.

In addition to the regularly sponsored educational program, the Nomenclature Department has participated in state educational programs in Kansas, Illinois, and Indiana.

A five-year proposed program of expansion of the Standard Nomenclature office briefly will cover:

(1) Details for the publication of the sixth edition; (2) future Standard Nomenclature institutes; (3) publications; (4) exhibits; (5) intra-office developments; (6) inter-office developments; (7) educational programs; (8) extra association activities.

A Handbook on the Standard Nomenclature of Diseases and Operations has been developed for senior medical students, interns, and residents. The major objective of this Handbook is to present in simple form the basic principles of terminology of the Standard Nomenclature of Diseases and Operations and a brief analysis of the Nomenclature to show that it can be adapted to conditions prevailing in the physician's private practice and hospital.

REPORT OF THE ECONOMIC RESEARCH DEPARTMENT

The Economic Research Department was initiated in January 1959. Its predecessor was known as the Bureau of Medical Economic Research and was under the direction of Frank G. Dickinson, Ph.D. until the end of December, 1958. Since the reporting year was thus evenly divided into two parts, it may be well to organize this report in two separate halves.

The Alesen Committee to Study A. M. A. Objectives and Basic Programs decided in June 1958 at San Francisco to have its next meeting in Chicago early in September in order to complete a report for the Minneapolis meeting in December, and to terminate the Committee's work. During most of July the Bureau edited and coded the returns to the Alesen Committee's questionnaire.

The hospital study, mentioned in previous annual reports, required the services of two research assistants for the entire year and that of a third until the end of October. Perhaps the most tangible result which has come from the study to date is the development with the office of the Standard Nomenclature of Diseases and Operations of a grouping of Standard Nomenclature codes into approximately 235 categories. This grouping, it is believed, will appear in the 1960, or fifth, edition of Standard Nomenclature. Some work on this particular project by the Bureau occurred during the latter half of 1958; much of the coding and editing had been completed by early summer of 1958.

Otherwise, the work of the Bureau in the remaining two to three months of 1958 was devoted to short publications, as miscellaneous publication M-116 entitled, *Medical Care Prices: Long Run Versus Short Run*. This is another in a series dealing with the latest Consumer Price Index data available from the Bureau of Labor Statistics. It continued the method of presenting data both in terms of the old base, 1935-1939, and the new base of 1947-1949. The format of this publication was a little different from that in the past and seemed to be more attractive. Its charts received many favorable comments and, on the whole, this publication, as others of its type, seems to have been well received by physicians and medical society executives who find the type of information the publication provides very helpful to them in presenting the economic position of medical care to the public.

Among other publications completed during this period was one entitled, *New Experiments to Provide Voluntary Health Insurance for Retired Persons* (Dr. Polner). This was printed as miscellaneous publication M-117, appearing in the fall of 1958. Before the end of the year a new subject index to the publications of the Bureau for the period 1947-1958 was completed. A review of *Readings in Medical Care* was completed early in December 1958 and was reprinted as miscellaneous publication M-119. During this period a short editorial on the decline in the baby boom was also written and an article on the cost of living was reprinted from the Chicago Daily Tribune. Research was also initiated on a study of the revised series of personal consumption expenditures. Some work was done on the problems of the aged and aging, on physicians' incomes, and on other fairly common queries concerning economic matters which frequently face the medical profession.

Dr. Dickinson's retirement became effective December 31, 1958. Dr. Kemp assumed the directorship of the Economic Research Department on January 1, 1959, and worked on a part-time basis during the six-month period, January to June 1959. From the time of his first visit it became eminently clear that the Economic Research Department would participate extensively in the Association's activities dealing with legislation of the Forand type.

By the end of January, the preliminary copy of the HEW report on Hospitalization Insurance for OASDI Beneficiaries was made available to the Department. A critical comment on this publication was prepared for Dr. Larson who presented it at a meeting in Washington. As soon as the revised version arrived in April a memorandum was prepared on it. On numerous occasions between January and June reference was made to Forand type legislation, to the HEW report and to the critical comments on these reports which the Department prepared.

The Department will work more closely with other agencies in the socioeconomic division and with other divisions and departments at headquarters than has been the case in the past. The Department's members have sought to service the other departments and divisions through attendance at meetings and by fulfilling requests for data, comments, or questions on the activities of these departments. They also have submitted memoranda raising questions about the long-term impact of some developments, notably those in health insurance.

Among the items produced by the Department during the first six months of 1959 was an article on *Personal Consumption Expenditures* (Dr. Martin), a comparison between the Commerce Department's new series and its old series, published as Bulletin 106. Another article entitled, *Critique of Some Statistics on Health Insurance Among the Aged* (Dr. Polner) directed attention to the fact that not all of the aged need and want health insurance and was reprinted as publication M-120. Both of these items had appeared earlier as articles in *The Journal of the American Medical Association*. The material cited above in the form of comments on the HEW reports also should be included among the tangible production of this Department in the first half of 1959. Book reports were also prepared for inclusion in J. A. M. A. during this time. A substantial number of memoranda additionally have been prepared dealing with the interest of insurance companies in relative value studies, a statement of the Department's position on relative value studies, a memorandum for the Law Department dealing with incomes of physicians and lawyers, and one on the relationship between economic progress and the desirable extent of certain types of benefit payments under voluntary health insurance. Additional memoranda were prepared with respect to the problem of impact of unions on hea [illegible] such as the Rockefeller [illegible] *coverage in New York state.*

Statistical information has been gathered for a number of other departments dealing often with the problem of setting forth and interpreting information on the indexes of the Bureau of Labor Statistics. Information has been tabulated additionally on paramedical personnel as well as on the distribution of employees by size of plant for various industries in our economy.

A notable development in the activities of the Department was its membership in the National Industrial Conference Board, which already has proved useful not only to the Department itself but to other departments at headquarters.

The Board in addition to its two monthly publications—"Business Record" and "Management Record," provides special studies such as "Company Medical and Health Programs," weekly items, and "help in a hurry" through which we can ask the Board's staff to do some immediate research for us. This subscription was designed as part of the development of a research program devoted largely to studies of the aged and aging and has resulted thus far in the preparation of several bibliographies and some progress on manuscripts on the financial resources of the aged. The Department also has prepared statements on over-all programs involving suggestions for political leaders to consider.

In the midst of these activities the hospital study has been placed on a secondary level of priority. Several steps have been taken to obtain some information from it at a minimum cost. A sample of the New England group has been drawn. This was a ten per cent sample and was found generally to be as informative and reliable as a one hundred per cent return would have been.

During this fiscal year two other articles, "Inter-Relationships of Patient, Physician, and Retirement" and "One More Pitfall in Diagnosing Patients" (Dr. Polner), were published in December 1958 and March 1959 respectively. Both were published in the *New Physician* and both were reprinted by the Department. A draft entitled, "Statistics of Studies of Utilization of the Short-Term General Hospital by Those Persons 65 Years of Age and Over: An Inquiring Note" (Dr. Polner) has been completed recently. An article already has reached draft form on the medical care price indexes for the year averages of 1958. It may prove to be one of the first publications of reporting year 1960. Drafts of an article also have been prepared on the financial resources of the aged.

With the conclusion of this interim period of reorganization, the Department's orientation is clearer than it was at the start of 1959. It would seem also that the Department has a clearer role than its predecessor in the headquarters' organization. The formation of an economic research committee with work to be done by outside scholars is one of the activities which we are expected to service in the future. In its closer work with other A. M. A. councils and committees, the Department is expected to operate primarily as a consultant, providing interpretive and analytical comments as well as observations on long run implications either orally or in written memoranda. With Dr. Kemp's arrival on a full-time basis and some increase and adjustment of staff, the Department can service other personnel and headquarters departments with increasing effectiveness.

REPORT OF THE DEPARTMENT OF HEALTH EDUCATION

Reorganization.—As a part of the administrative organization of the AMA, this Department has become a part of the Division of Socio-Economic Activities. The radio and television activities of the AMA, located in this Department since 1923, have been transferred to the Communications Division.

Personnel.—On February 1, 1959, the staff of the Department was augmented by the addition of Mrs. Patricia M. Chesley as pamphlet editor. Mrs. Chesley has a rich background of experience in editorial, journalistic, and public relations work.

Fitness of American Youth.—The House of Delegates passed a resolution at its June 1959 meeting supporting the President's Council on Youth Fitness and its work.

During the year covered by this report, the Director of the Department was reappointed to the President's Citizens Advisory Committee on the Fitness of American Youth for a third consecutive year, ending in 1960. He was also made a member of the Executive Committee of the Citizens Advisory Committee, and attended two meetings in connection with this membership.

Field Services.—More than 50 per cent of the time and a large percentage of the Department's budget are expended in services in the field.

The Department staff traveled 169,309 miles to attend meetings or address audiences in 27 states, the District of Columbia, and Copenhagen, Denmark. Audiences numbered 186 and totaled 24,552 persons.

The staff participated in 85 conferences and committee meetings.

It was necessary to decline 100 engagements.

The group reached in this service included medical societies, individual physicians, state health departments, universities, teacher education colleges, voluntary health agencies, youth-serving agencies, departments of the United States Government and of state and local governments other than health departments, women's clubs, civic clubs, chambers of commerce, youth groups, parent-teacher associations, mixed public health audiences, high school assemblies, health education workshops, inter-agency committees, and miscellaneous groups representing a broad cross-section of the American people, professional and lay.

The Department has one large and one small exhibit on fitness, and a large and a small exhibit on the health appraisal of the school child.

A new exhibit is in preparation on the subject of health and safety in athletics.

Correspondence.—Correspondence with doctors and cooperating agencies, 7,682; Question & Answer correspondence, 18,687.

The total number of letters handled was 34,051.

Manuscript pages of typed copy totaled 6,544.

Questions and Answers.—During the 12-month period ending June 30, 1959, a total of 18,687 letters were answered. The leading subject of interest was plastic surgery, which brought 6,947 requests for information and literature. This was stimulated by an article in consumer publications mentioning the Department as a source of information.

The second highest number of requests was for material on the human body; these totaled 1,419.

In third place were 1,248 requests for sex education materials.

The *Today's Health* column, "That's a Good Question," contained 99 articles, 85 prepared by the Department, 12 by the Council on Foods and Nutrition, and 2 by the American Dental Association.

Manuscripts, Book Reviews, Etc.—The staff reviewed 14 books for *The Journal of the American Medical Association* and prepared 85 contributions for *Today's Health* question and answer column, "That's a Good Question."

The Department staff originated 46 articles and 8 book reviews published in periodicals other than those of the American Medical Association.

Mutual Network Broadcasts.—The Director of the Department was invited in April 1959 to participate in a weekend program on the Mutual Broadcasting System, entitled "Inside Report." This program consisted of features dealing with various phases of current events, including health. Two broadcasts a week of five minutes each were prepared, recorded on tape, and broadcast. A total of 28 broadcasts were made.

Health and Fitness Unit.—The staff accepted invitations in 24 states, the District of Columbia and Canada to deliver 142 addresses, to take part in 59 conferences, institutes, annual meetings, and conventions of health education or other organizations, and to perform a variety of other services. The travel covered 109,890 miles.

The Seventh National Conference on Physicians and Schools, sponsored by the AMA, will be held October 13-15, 1959, at the Moraine-on-the-Lake Hotel, Highland Park, Illinois. It will be devoted to "Significant Issues in School Health and Physical Education," and will consider several important controversial issues.

These National Conferences have stimulated many state and local conferences of a similar nature covering school health. A survey started this spring will be presented to the Conference this fall.

One of the educational consultants (Hein) is now serving as staff secretary for the Association's Committee on the Medical Aspects of Sports (formerly the Committee on Injury in Sports).

The medical consultant (Dukelow) continues as an AMA appointee to the Joint Committee on Health Problems in Education of the National Education Association and the AMA, which has re-elected him secretary.

The Board of Trustees or the Executive Vice President has approved membership or participation in the activities of more than 40 national health agencies.

Pamphlet Production and General Printing.—Department of Health Education literature was exhibited and distributed at meetings, workshops, health days, career days, state and county fairs, and by schools, parent-teacher associations, medical societies, and health agencies, both on this continent and abroad. The sale of Department of Health Education publications by the Order Department totaled 526,291.

Excluding pamphlets, 72 printed items were handled by the pamphlet editor for the Department of Health Education. In addition, 877 letters and 378 telephone requests from individuals and organizations were answered during the period of this report.

REPORT OF THE WASHINGTON OFFICE

I. Reorganization

There has been a reorganization in the Washington Office with a new concept of operation. This office functions not as an independent unit, but as a division of the headquarters staff. The members of this staff represent the various divisions at headquarters and report directly to their divisional directors under whom their programs operate. The objective is to facilitate integration of the activities in Washington with similar activities in Chicago.

The various divisional activities are coordinated by the Manager in a teamwork effort. He reports directly to the Executive Vice President and is responsible for carrying out directives as well as reporting significant events on the Washington scene.

DEPARTMENTS

The Washington Office executive staff, whose functions represent the extension geographically of the various divisions, is as follows:

Communications Division.—Mr. Ted Lewis and Mr. Dayton Moore have responsibilities playing a vital role on the editorial and news media activities. Their duties are to maintain liaison with the Washington news media corps, providing information concerning AMA policies and activities. They also serve as associate editors for the *AMA News* and *JAMA*.

Law Division.—Mr. Paul Donelan, legal adviser, analyzes bills of medical interest and prepares legislative analyses for review by the Law Division and the Council on Legislative Activities. He surveys daily the *Congressional Record* and notifies all concerned of matters of significant interest.

Socio-Economic Division.—Dr. Otis Anderson, medical liaison representative, maintains contact with significant medical posts throughout governmental agencies. In addition, he services the many councils and committees whose programs are related to the various departments of government.

Field Division.—Three legislative liaison representatives—Messrs. Cecil Dickson, James Foristel, and Harold Slater—are registered as lobbyists with the primary assignment of liaison with members of Congress. They are in constant contact with the Field Division Director and the four field representatives on legislative developments.

Administrative Division.—The Manager, Dr. Roy Lester, answers directly to the Executive Vice President, similar in manner to the other divisions, and is responsible for representing the Executive Vice President in Washington and for the coordination of the diverse activities of this office.

Mr. Paul Grieder is administrative assistant and has as his primary duties personnel administration and bookkeeping.

INTEROFFICE COMMUNICATIONS

The goal is to have the Washington Office staff become a vital part of the overall AMA staff and an important segment of the team whose responsibility it is to implement and make effective the total AMA program and objectives. This is being accomplished by an increased communications effort. Twice weekly, conference telephone calls are held with the headquarters staff. Daily written reports are submitted when indicated. The teletype machine connecting the two offices is used repeatedly as matters of an urgent nature develop. The Manager keeps informed of headquarters activities by attending Division Directors' meetings in Chicago and in turn relays this information to the Washington executive staff. The general staff meetings at headquarters are attended monthly by two members from Washington on a rotating basis.

PUBLICATIONS

This office has ceased all publication activities, the function being transferred to the Chicago Office. The material contained in the *AMA Washington Letter* is now incorporated in the *AMA News*. The data formerly appearing in the *Legislative Analysis* is currently presented in the Law Division's publication, *Medical Legislative Digest*.

CONCLUSION

The reorganization was instituted in January 1959. After this brief period under the present setup, indications are that an efficient and effective team is forming. Minor changes will be made as experience and time indicate.

II. Delegations of Physicians Visiting Members of Congress

During the first session of the 86th Congress, fourteen delegations of physicians visited their members of Congress. Six State medical groups arranged for either a breakfast, luncheon, or dinner meeting which members of Congress attended. In each of these cases the Washington Office representatives made arrangements for the meetings and attended as guests.

In most cases the State delegations were made up of at least one physician from each Congressional district. Discussions were frank and fruitful, dealing with the chief legislative problems confronting organized medicine. On eight other occasions, a small group of physicians called on all or a major percentage of the members of Congress from their States.

REPORT OF THE JUDICIAL COUNCIL

Since its last annual report was submitted the Judicial Council has held four regular meetings. It has considered no appeals. The major activity of the Council during the past year was the review of the legal status of, and the policy statements of the House of Delegates regarding osteopathy.

Osteopathy

In its Special Report to the House of Delegates at its June, 1959, meeting the Judicial Council recommended:

> "(1) The principle be reaffirmed that all voluntary professional association between doctors of medicine and those who do not practice a system of healing based on scientific principles is unethical.

"(2) It shall not be considered contrary to the Principles of Medical Ethics for members of the American Medical Association voluntarily to associate professionally with physicians, other than doctors of medicine, who are licensed to practice the healing art without limitation and who base their practice on the same scientific principles as those adhered to by members of the American Medical Association, and that

"(3) It shall not be considered contrary to the Principles of Medical Ethics for members of the American Medical Association to teach students of osteopathic medicine who seek to develop and improve their knowledge of the science of medicine and thereby to improve their ability to provide a better quality of medical care."

After consideration of these recommendations by the Reference Committee, which modified them to some extent, the House after debate adopted the following principles regarding relationships between doctors of medicine and osteopaths:

"(A) All voluntary professional associations between doctors of medicine and those who practice a system of healing not based on scientific principles are unethical.

"(B) Enactment of medical practice acts requiring all who practice as physicians and surgeons to meet the same qualifications, take the same examinations and graduate from schools approved by the same agency should be encouraged by the constituent associations.

"(C) It shall not be considered contrary to the Principles of Medical Ethics for doctors of medicine to teach students in an osteopathic college which is in the process of being converted into an approved medical school under the supervision of the A. M. A. Council on Medical Education and Hospitals.

"(D) A liaison committee be appointed by the Board of Trustees of the American Medical Association to meet with representatives of the American Osteopathic Association, if mutually agreeable, to consider problems of common concern including inter-professional relationships on a national level."

The Council concluded that the only changes effected by the action are: (a) doctors of medicine may now ethically teach in an osteopathic college which is in the process of being converted into a medical school under the auspices of the Council on Medical Education and Hospitals; and (b) the Board of Trustees may appoint a liaison committee to meet with a similar committee of the American Osteopathic Association to consider problems of common concern including interprofessional relationships at a national level.

Ownership of Pharmacies

As members of the House of Delegates know the Principles of Medical Ethics, as recently as June, 1954, contained the statement "an ethical physician does not engage in barter or trade in the appliances, devices or remedies prescribed for patients, but limits the sources of his professional income to professional services rendered the patient."

In June, 1954 the Principles of Medical Ethics were revised to provide in this regard: "It is unethical for a physician to participate in the ownership of a drugstore in his medical practice area unless adequate drugstore facilities are otherwise unavailable. . ."

In June, 1955 the Principles of Medical Ethics were revised again to provide "it is not unethical for a physician to prescribe or supply drugs, remedies or appliances as long as there is no exploitation of the patient."

At the June, 1957 annual session of the Association the present Principles of Medical Ethics were adopted. Section 7 of the Principles provides, "drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interest of the patient."

In opinions published in The Journal the Judicial Council, interpreting this Principle of Medical Ethics, expressed the opinion that the physician as a citizen has the right to make investments according to his own best judgment; that the fact that he is a physician should not preclude him from investing in the stock of a pharmaceutical company, provided, of course, that no subterfuge is employed and no unusual control of the company is exercised by the doctor. The Council also expressed the opinion that it is not, in itself, unethical for physicians to own pharmacies; provided there is no exploitation of the patient.

In November, 1958, the Council interpreted Section 7 of the Principles as it relates to dispensing and supplying drugs, remedies or appliances by saying: "It is known that there will be situations when it is necessary or desirable for a physician to dispense or supply what he has prescribed. The Principles permit this to be done . . . In essence this language [of Section 7] means that a physician in the exercise of sound discretion may dispense 'in the best interest of his patient'; it does not authorize him to dispense solely for his convenience or for the purpose of supplementing his income."

The Council has received many letters which indicate physicians in many communities are forming corporations to package and sell standard medicines under the corporation's name. It appears that the physician stockholders of these small, independent corporations write prescriptions for medicines of the brand or name used by their corporation.

The Council has received letters protesting against the ownership of pharmacies by physicians. The Council repeats it is not *in and of itself* unethical for physicians to own pharmacies or to hold stock in pharmaceutical companies. It is, however, the definite opinion of the members of the Judicial Council that the ownership of a pharmacy or the ownership of stock or financial interest in a pharmaceutical company can, under certain conditions, become unethical and contrary to the best interest of the public and the medical profession.

Because of the nature of these practices and because they can vary so greatly, the Council has insisted that it is the obligation of the local medical society to insure that no one of its members violates the high ethical traditions of the medical profession. It is the obligation of the county medical society to investigate complaints against its members and to take appropriate action, when indicated, to protect both the public and the profession.

Medical Disciplinary Committee

The Judicial Council is pleased to note that the Board of Trustees has appointed the Medical Disciplinary Committee. The Council hopes that each member of this Association, the constituent and component societies and all staff members of medical societies will co-operate, to the fullest extent, with this Committee. The Medical Disciplinary Committee is conducting a survey to ascertain whether or not adequate disciplinary procedures exist and whether the procedures are being used. From this survey the Committee hopes to formulate recommendations which will assist medical societies in the fulfillment of one of their basic obligations to society.

Respectfully submitted,
L. A. Buie, M.D.
J. Morrison Hutcheson, M.D.
Robertson Ward, M.D.
George A. Woodhouse, M.D.
Homer L. Pearson, Jr., M.D., *Chairman*
Edwin J. Holman, *Secretary*

REPORT OF THE COUNCIL ON CONSTITUTION AND BYLAWS

This report covers the period July 1, 1958, through June 30, 1959. It includes reference to amendments made to the Constitution and Bylaws by the House of Delegates during this period, amendments now pending before the House of Delegates and general comments relative to future activities of the Council.

Amendments to the Constitution.—No changes were made in the Constitution although two suggested changes were considered. One, relating to "Successor To The Presidency," is discussed later in the report. The other was a suggestion that the Council consider amending the stated objects of the Association to include a statement regarding socio-economic conditions to facilitate promoting the art and science of medicine and the betterment of the public health. In a Special Report to the House of Delegates in June, 1959, the Council recommended that such an amendment not be adopted. The recommendation of the Council was approved by the House of Delegates.

Amendments to the Bylaws.—(1) *Dues Exemption for Resident Physicians.*—Recognizing the fact that many physicians take residency training after they have been out of medical school more than five years, Chapter III, Section 4(C) was amended so as to include dues exemption for "Interns and residents serving in training programs approved by the Council on Medical Education and Hospitals of the American Medical Association." The five-year limitation, formerly imposed, was removed.

(2) *AMA News, Today's Health, Specialty Journals.*—The Board of Trustees suggested that the AMA News and Today's Health should be provided to all dues-paying members of the Association as a benefit of membership. It was also suggested that each member be entitled to select one of the Specialty Journals in addition to THE JOURNAL of the A. M. A. as a membership benefit. The House of Delegates concurred in these suggestions and amended Chapter III, Section 3, to read "Membership dues will include subscriptions to THE JOURNAL of the American Medical Association, the AMA News, Today's Health and any one of the A. M. A. Specialty Journals of the member's choice."

(3) *Introduction of Resolutions and New Business at AMA Meetings.*—The House approved a suggestion of the Speaker that Resolutions must be in his hands or in the AMA headquarters office by noon of the day before the opening meeting of a session; otherwise they will be considered as emergency matters. To accomplish these ends, and to increase the quorum of the House from fifty to seventy-five, the following changes were made in Chapter IX, Section 2:

> "(C) Introduction of Resolutions.—To be considered as regular business, resolutions must be in the hands of the Speaker or submitted to the Headquarters Office of the Association not later than noon of the day before the opening meeting of a session of the House of Delegates.
>
> "(D) New Business: Resolutions.—Resolutions presented later than noon of the day before the opening meeting of a session of the House will be referred for consideration by the House only when they are:
> (1) Presented by one of the Sections, or
> (2) Presented by the Board of Trustees, or
> (3) Accepted by unanimous consent, or
> (4) Of an emergency nature.
>
> "(E) New Business: Other.—New Business, other than Resolutions, not presented in the regular order of business as set forth in Chapter IX, Section 2(A), will be referred for consideration by the House as new business if received by the Speaker by 9 a.m. of the last day of any meeting. To be accepted for referral to the House on the last day, however, such New Business must be.
> (1) Presented by one of the Sections, or
> (2) Presented by the Board of Trustees, or
> (3) Accepted by unanimous consent, or
> (4) Of an emergency nature.
>
> "(F) Procedure.—When the Speaker receives any Resolution pursuant to Section 2(D) or any other New Business, for introduction on the last day, pursuant to Section 2(E) he shall, unless it is introduced from a Section, the Board of Trustees or by unanimous consent, refer it to the appropriate Reference Committee, which shall then report to the House as to whether the matter involved is or is not of an emergency nature. If the Reference Committee reports that the matter is of an emergency nature, the matter shall be presented to the House. Matters thus presented may be acted upon by the House without further reference to Committees. Favorable action shall require the affirmative vote of three-fourths of all delegates present and voting. If the Committee reports that the matter is not of an emergency nature, the Speaker shall defer its introduction until the next session of the House.
>
> "(G) Quorum.—Seventy-five of the voting members of the House of Delegates shall constitute a quorum."

(4) *Rules of the Board of Trustees.*—To assist the Board of Trustees in revising its Rules of Procedure, and at its request, the House adopted the following changes in Chapter XVI:

"Section 2.—Organization

"(A) Immediately following the conclusion of the Annual Session, the Board shall organize by electing a chairman, vice-chairman, secretary, and committees necessary to its needs.

"(B) The Board of Trustees at its organization meeting, by resolution adopted by a majority of the Trustees in office, may designate three or more Trustees to constitute an executive committee. Members of the committee shall serve until the next organization meeting of the Board and until their successors are elected and qualified. The executive committee shall have such powers and duties as may be defined from time to time by resolution of the Board of Trustees.

"Section 3.—Meetings

"(A) There shall be at least four regular meetings of the Board of Trustees each calendar year to be held at such time and place as the Board shall determine. Notice of each regular meeting shall be given at least ten days before each such meeting.

"(B) Special Meetings may be called at any time by the chairman or at the request of five members of the Board. Notice shall be given at least five days before each such meeting. The notice shall specify the general purposes of and business to be transacted at the meeting, but other business may also be transacted.

"(C) Six Trustees shall constitute a quorum.

"Section 5.—Notice

Notice is given if delivered in person, by telephone, mail, or telegram; if mailed, such notice shall be deemed to be delivered when deposited in the United States mail, addressed to a Trustee (and other persons entitled to notice) at his address then appearing on the records of the Association, with postage prepaid, and if given by telegraph, shall be deemed delivered when the telegram is delivered to the telegraph company.

"Section 6.—Waiver of Notice

Notice of any meeting and the object or business to be transacted at a meeting of the Board need not be given if waived in writing, or by telegraph, cable, or wireless before, during, or after such meeting. Attendance at any meeting shall constitute a waiver of notice of such meeting except where attendance is for the express purpose of objecting to the transacting of any business because the meeting is not lawfully called or convened."

(5) *Filling of Certain Vacancies by Board of Trustees.*—At the request of the Board, the Council restudied the question of whether or not the duty of the Board to fill certain vacancies in councils and general offices, until the next annual session, should be mandatory or permissive. After concluding that such duty should be mandatory and that it should extend to the Speaker and Vice-Speaker, as well as to those offices previously covered, the Council recommended, and the House approved, an amendment to Chapter XVI, Section 4(I) to read as follows:

> "(I) Fill any vacancy in any council or in any general office of the Association, except that of President or President-Elect, by appointment until the next annual session of the House, at which time the House shall elect an eligible person for the unexpired portion of the term, unless otherwise provided for in the Constitution and Bylaws."

Amendments pending before the House of Delegates.—The Council recognized the existence of an inconsistancy in the provisions of Article VII, Section 5 of the Constitution relating to Successor to the President. In order to clarify the meaning of this Section, the Council recommended an amendment to read as follows:

> "If the President dies, resigns or is removed from office, the President-Elect shall immediately become President and shall serve for the remainder of the term of his immediate predecessor. If the time served is less than six months, he shall also serve as President until the second annual session following his election as President-Elect. If a President-Elect succeeds to the Presidency six months or more before the following annual session, the House of Delegates at the following annual session shall elect another eligible person to serve as President until the next annual session. If the President-Elect dies, resigns or is removed from office, the office of President-Elect shall remain vacant and at the next annual session, the House of Delegates shall elect an eligible person to serve as President until the next annual session. If there is a vacancy in the offices of both President and President-Elect, the Vice President shall act as President until the next annual session, at which time the House of Delegates shall elect an eligible person to serve as President until the following annual session."

Since this was a proposal to amend the Constitution, it had to lay over for one session of the House. It is therefore before the 1959 Clinical Session for final action.

Future activities.—As the House knows, this Council is a fact-finding and advisory committee. As such, its deliberations consist of more than the mere selection of words to express the intent of an amendment already approved by the House. The Council therefore wishes to mention a few of the matters which it expects to consider during the coming year:

(1) When the section relating to the Successor to the President was being studied, it was noted that reference was made to removal from office of the President or the President-Elect but that the grounds or procedure for such removal are not stated. The Council will endeavor to determine whether or not provisions relating to this problem should be included in the Constitution or Bylaws and what form they should take.

(2) It has been suggested that some changes are needed with respect to the eligibility requirements for registration at the Scientific Assembly. A study of this problem will be made.

(3) As the Constitution now stands, a President-Elect who succeeds to the Presidency six months or more prior to the next annual session is not eligible for election as President at that next annual session. Should this provision be changed?

(4) Should affiliate members be selected by the Judicial Council without referral of the selections to the House of Delegates? In fact, should the requirements for affiliate membership be enlarged to include certain reputable physicians not now eligible for membership under any other classification?

These are examples of the important issues which the Council must determine. The Council will welcome an expression of opinion on any of them from any member of the Association.

Council Membership.—Dr. William Hyland was re-elected by the House of Delegates in June, 1959, as a member of the Council for another five years term.

Respectfully submitted,

B. E. Pickett, Sr., M.D., Chairman
William D. Stovall, M.D.,
Vice Chairman
William Hyland, M.D.
Walter E. Vest, M.D.
Walter C. Bornmeier, M.D.
George E. Hall, Secretary

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

To the Members of the House of Delegates of the American Medical Association:

The Council on Medical Education and Hospitals submits the following report covering the period from July 1, 1958, to June 30, 1959.

During the period covered by this report, the Council on Medical Education and Hospitals has concerned itself with the various matters referred to it by the House of Delegates and with the many activities and responsibilities which are related to its established functions. These functions are in one manner or another directed in support of the Council's over-riding responsibility for the development and maintenance of high standards of medical education at the level of medical schools, internships and residencies and continuation education as well as in the various paramedical fields.

The Significance of Approval of Educational Programs by the Council on Medical Education and Hospitals

Because of indications that the Council's accreditation program may on occasion be subjected to misunderstanding in relationship to other established policies and attitudes of the American Medical Association, the following statement was developed in cooperation with the Law Department and approved by the Council on Medical Education and Hospitals on February 7, 1959:

> The basic responsibility of the Council on Medical Education and Hospitals is to act on behalf of the American Medical Association in developing and maintaining the highest possible standards of medical education. Programs at all levels of medical education—medical school, internship and residency—are evaluated on the basis of their educational worth to the students concerned. Decisions concerning the programs are not compromised by other considerations.
>
> The Council's approval of a program signifies only that the Council believes that the program offers a sound educational opportunity for the purposes which the program is designed to fulfill. Council approval of a program should not and cannot be interpreted to indicate attitudes or opinions of the Council, its individual members or the Association of which it is a part in favor of or opposed to social, economic, political or other beliefs of the organization or institution sponsoring the program.

Costs of Medical Research Grants

There have been many studies which, in general, have indicated that about 35% of total medical research expenditures by medical schools represent indirect costs to the medical school. Under existing policies, medical research grants sponsored by the federal government allow only 15% of the grant to be applied for reimbursement of indirect costs. In 1958, HEW and NIH research grants to medical schools amounted to $48 million. Through the incomplete reimbursement for indirect cost during that year the medical schools subsidized federally sponsored research for approximately $7 million.

In consideration of these and other serious implications, the Council submitted to the Board of Trustees and the Board of Trustees adopted the following statement:

Sponsored Medical Research

Medical progress has resulted in the cure and prevention of many diseases and an increase in the years of productive living for millions of individuals. This progress has been based largely on new knowledge discovered through medical research and applied through medical practice. There remains much to be learned in the understanding of normal and abnormal biological processes necessary to produce further improvement in physical and emotional health.

An expanding, increasingly health conscious population has created a need for an accelerated pace of medical research. This has resulted in increased medical school research, most of which is now sponsored by the federal government, voluntary health agencies, and philanthropic organizations.

These expanded research activities have increased our medical knowledge, and the opportunity to train young medical scientists for future research and teaching careers.

These activities, however, have necessitated enlarged supporting staffs and diversion of medical school funds to assist the responsible investigators. Administrative personnel have been added to take care of larger physical plants, to purchase and maintain scientific equipment, to obtain research materials, and to assist with the required accounting procedures and fiscal and scientific reports.

These and other necessary adjustments by medical schools to the greatly increased volume of sponsored research have diverted funds urgently needed for the medical schools' teaching functions into support of research activities sponsored by outside agencies. This will have an increasingly deleterious effect on the medical schools' obligation to prepare physicians for careers in the practice of medicine.

The Board of Trustees of the AMA feels that as a matter of principle medical schools should not be placed in the position of partially subsidizing research programs sponsored by extramural agencies. Furthermore, it is believed that the financial drain resulting from continuation of present medical school financial commitments for this purpose will handicap their teaching responsibilities and lead to a loss of physicians adequately trained for medical practice.

It is urged, therefore, that all agencies sponsoring research in medical schools adopt the policy of fully reimbursing the medical school on a cost accounting basis for all expenditures related to the sponsored research project. This policy is characteristic of most other research grants in scientific and related fields.

We wish to emphasize that this statement does not represent a request for subsidy of medical schools. It is simply an endorsement of the principle that sponsoring agencies should remunerate medical schools in full for the research projects they sponsor.

In the instance of grants from federal sources, implementation of this policy could be accomplished by the federal government through reallocating of funds without an increase in the total funds appropriated for medical research.

Medical Scholarship and/or Loan Funds

The Council submitted to the Board of Trustees at the June 1959 meeting, the following statement:

> The Council on Medical Education and Hospitals wishes to report to the Board of Trustees its concern that well qualified students may be deterred from entering medical school because of financial considerations. The Council recommends to the Board that it initiate action directed toward a study:
>
> 1) Documenting any need such as may exist for the establishment of a medical scholarship and/or loan program sponsored by the American Medical Association.
>
> 2) The method of selecting recipients of such scholarships and/or loans on the basis of financial need and demonstrated scholarly and personal qualifications; and
>
> 3) The means of administering an AMA sponsored medical scholarship and/or loan program by which such needs as may exist can be most equitably met to assure that financial considerations do not unduly deter well qualified and highly motivated students from entering the study of medicine.

After consideration, the Board of Trustees transmitted (as Letter M, Supplementary Report of Board of Trustees) this statement to the House of Delegates with a recommendation for its adoption. The Reference Committee on Reports of the Board of Trustees recommended that a thorough investigation of this problem should be very informative and recommends that the Board of Trustees be requested to initiate such a study. This was adopted by the House of Delegates.

Matters Referred to the Council by the House of Delegates

Resolution #10 (June 1959) and Resolution #11 (Dec. 1958) either directly or by implication reaffirm a previously established policy (Resolution #60, June, 1957) of opposition to the payment of interns and residents for medical services rendered by the interns or residents. In recommending approval of the intent of these resolutions (#10, 1959; #11, 1958), the reference committees noted that this is a matter of present study of the Council on Medical Education and Hospitals (and through the Liaison Committee on Medical Education in conjunction with the Association of American Medical Colleges) and the Council on Medical Service. In compliance with the recommendations of the reference committees as approved by the House of Delegates, this matter continues to receive the careful attention of the Council.

In recommending that Resolution #21 (June 1959) on the "Council on Medical Education and Hospitals" not be approved, the Reference Committee called to the attention of the Council the importance of:

1. Maintaining continuing concern that its activities in regard to internship programs be promptly taken.
2. Informing hospitals involved promptly of the reasons for any unfavorable actions, and
3. Dissemination of information concerning the mechanism by which such unfavorable actions can be reversed without internship programs being deleted from the published list of approved programs.

In regard to the above, the Council and staff have studied their activities related to surveying, reporting and reviewing procedures so that the total accrediting process of internship programs will be accomplished in the least possible time. A new policy has been established whereby each hospital will receive a letter promptly following the program survey and review which will enumerate the deficiencies found prior to action on the program by the Internship Review Committee. This new policy will allow for clarification of any matters in question, and for the hospital to take such corrective measures as are possible. Such corrective measures will be taken into account by the Internship Review Committee at the time of its action. When unfavorable action is taken in regard to an internship program, the date of the action is such that under usual circumstances the hospital will have ample opportunity to make such modifications in its program as are necessary for reinstatement of approval prior to the date on which the internship program would be deleted from the list of approved programs. This entire procedure will be carefully documented in the forthcoming Internship and Residency Number of The Journal which is scheduled for publication in October, 1959. In addition, it is anticipated that a separate information sheet on these policies and procedures will be enclosed with every letter of adverse action or disapproval which goes to a hospital in the future.

Annual Reports of the Council

The organization of the Council on Medical Education and Hospitals in 1904 included the responsibility of making an annual report on the existing conditions of medical education in the United States. This responsibility was accomplished during the year through preparation of material for special issues of The Journal on the following subject matter:

Selected Papers from the Annual Congress on Medical Education and Licensure held February 8-9, 1959, May 16 and 23, 1959.

Medical Licensure Statistics (1958), May 30, 1959.

Postgraduate Courses for Physicians, August 15, 1959 (covering the period September 1, 1959 to August 31, 1960).

Directory and Annual Report of Approved Internships and Residencies, October 10, 1959.

Medical Education in the United States and Canada, November 15, 1959.

The presentation of these annual reports is an important aspect of the activities of the Council staff and necessitates constant awareness of changes and close cooperation with associated groups and organizations.

Medical School Accreditation Studies and Accreditation

In liaison with the Association of American Medical Colleges and where Canadian medical schools were visited in liaison with the Association of Canadian Medical Colleges, the following institutions were surveyed by representatives of the Council on Medical Education and Hospitals during the academic year 1958-1959:

University of Chicago School of Medicine
University of Michigan School of Medicine
University of Ottawa Faculty of Medicine
Jefferson Medical College
Yale University School of Medicine
Vanderbilt University School of Medicine
Bowman Gray School of Medicine
University of Colorado School of Medicine
Columbia University College of Physicians and Surgeons
Stritch School of Medicine of Loyola University
Albert Einstein College of Medicine
University of Kansas School of Medicine
Washington University School of Medicine
Creighton University School of Medicine

In accordance with established policy, liaison studies are now made of newly developing medical schools several times during the devolopment period. Albert Einstein College of Medicine had all four years of the course in operation during the last academic year and was granted full approval upon visitation. Seton Hall College of Medicine and the University of Florida had the third year of their program in effect and will be eligible for consideration for full approval during the academic year 1959-1960.

The schedule for liaison survey visits for the coming academic year (1959-1960) includes the following institutions:

University of Alberta Faculty of Medicine
University of Western Ontario Faculty of Medicine
St. Louis University School of Medicine
Marquette University School of Medicine
University of Rochester School of Medicine and Dentistry
Seton Hall College of Medicine
Baylor University College of Medicine
University of Puerto Rico School of Medicine
University of Florida School of Medicine
University of Cincinnati College of Medicine
University of Mississippi School of Medicine
New York University College of Medicine
State University of Iowa College of Medicine
Dartmouth Medical School
Georgetown University School of Medicine

Potential Sites for New Medical Schools

The staff has made every effort to keep the Council informed regarding the potential development of new medical schools. Among the most significant recent developments are the following.

In a recent session the legislature of the state of Texas authorized the establishment of a new four-year medical school in San Antonio. The new school will be a part of the University of Texas which is presently engaged in studies directed toward determination of the most appropriate location for the new institution. Although the school will be an integral part of the University, the legislature indicated that the community of San Antonio will be expected to provide the necessary clinical facilities.

With construction of a new basic science building in Indianapolis, the first year teaching program was moved from the main University Campus in Bloomington to Indianapolis. Beginning in September, 1959, the University of Indiana will initiate a new program in medical education utilizing the vacated facilities on the Bloomington campus as well as the teaching facilities of other departments of the University. This new venture is designed to permit carefully selected students to complete the first two years of medical study while at the same time continuing work in an academic field through the baccalaureate and masters degrees.

There are other groups and institutions that have indicated varying degrees of interest and activity directed toward the development of additional medical schools. The incidence and timing of actual future establishment of new schools cannot be predicted.

The Council on Medical Education and Hospitals in collaboration with the Association of American Medical Colleges makes every effort to be of as much assistance as possible to those groups and institutions which contemplate development of new schools of medicine. Initial arrangements are now being made for consultative visits to St. Paul, Minnesota and Albuquerque, New Mexico (University of New Mexico) in regard to the possible establishment of new educational facilities at those sites.

Graduate Medical Education

The Council's responsibility in the field of graduate medical education pertains largely to internship and residency training programs. These responsibilities are discharged through four major activities:

(1) Evaluation of graduate training programs through the hospital survey visits of a staff of field representatives now totaling eight physicians, submission of these reports to 18 different internship and residency review committees, and to two American specialty boards for which review committees do not exist.

(2) Dissemination of information on programs and policy through individual letters and personal contacts, periodic notices in THE JOURNAL, and the publication annually of the Directory of Approved Internships and Residencies in the Internship and Residency number of THE JOURNAL.

(3) Collaboration and liaison with non-AMA groups representing hospitals, medical schools, specialty boards, national foundations and voluntary organizations, federal services, and others.

(4) Analysis of present status and projections of future trends through continued revision of questionnaires and progressive adaptation of accumulated data to machine records processing.

Internship.—The Essentials of an Approved Internship was revised as of June, 1958. The rotating internship continues to be the most popular type, and there is a growing tendency for hospitals to combine their resources and facilities in the support of single programs stronger than would be possible if operated separately. The Council staff is studying the effectiveness, from the standpoint of both the individual intern and the hospital, of any program with an intern complement of less than six physicians. A small number of hospitals now have approved internship programs with quotas as low as two interns.

National Intern Matching Program.—For the year July 1, 1959 to June 30, 1960, American Medical Association representatives elected to the Board of Directors were Dr. Walter S. Wiggins, Dr. Willard V. Thompson, and Dr. John C. Nunemaker. Dr. Nunemaker was elected by the Board to serve as a member of the executive committee as treasurer for the same period.

The results of the Eighth Annual National Intern Matching Program were published in March, 1959 and showed that there were 12,250 internships to be filled through the plan and 6,478 students matched in the plan. Internships unfilled through the matching plan were therefore 5,772. The number of foreign graduates participating in the matching program for 1959 was sharply reduced because of the requirement for certification by the Educational Council for Foreign Medical Graduates, and as a consequence the total number of interns matched is less than for the previous year. After this year, it is expected the number of participating foreign graduates will again be increased. The full report for the Seventh National Intern Matching Program for the year 1958 was published in The Journal of Medical Education in January, 1959. Extensive studies on the significance of the results shows that the quota saturation percentage for the affiliated hospitals has been increasing and is more favorable than that for the unaffiliated. It further showed that those hospitals with intern quotas of 20 or more are experiencing a much higher quota saturation than those with less. In addition, while more hospitals are offering higher stipends, the increasing high quota saturation for the low as compared with the high stipend hospitals shows that increasing numbers of graduates are attracted to an internship by factors other than stipend.

Educational Council for Foreign Medical Graduates

Although the Council has no direct official relationship to the Educational Council for Foreign Medical Graduates, because of the importance of the activities of this new organization to the Council's work, the staff renders every possible consultative assistance and keeps fully informed of the program of the Educational Council for Foreign Medical Graduates. Given below is certain of the current most pertinent information.

The next examinations for certification by the Educational Council for Foreign Medical Graduates are scheduled for March 16, 1960 and September 21, 1960. Examination centers have now been established at 31 locations in the United States, one in Canada, one in Hawaii, and one in Puerto Rico. Fifty-two foreign centers have been established, and continuing efforts are being made to increase the centers in foreign countries. A temporary certificate is now granted to those foreign graduates who come within five points of attaining a passing grade. This temporary certificate entitles the individual to spend two years as an American intern or resident, at the end of which time if he has not retaken the examination successfully he must return to his native land. July 1, 1960 is the date on which the sponsoring agencies expect all foreign medical graduates on United States hospital staffs will have been certified either with the standard or temporary certificate.

Annual Questionnaire.—At the suggestion of the Council, the annual questionnaire on foreign interns and residents issued by the Institute for International Education will be included with the annual questionnaire of the Council in the hope that 100% returns can be obtained. Furthermore, the census blank used by the Institute for International Education will contain space for recording the Educational Council for Medical Graduates status of each foreign medical graduate reported in the census. In addition, it is hoped that the census reports will indicate the number of foreign medical graduates serving in this country in graduate training positions other than internships and residencies.

Hospital Survey Program

The hospital survey program of the Council on Medicical Education and Hospitals deals entirely with the survey and evaluation of internships and residencies and their subsequent status. There are currently five full time and three part time physicians serving as field staff representatives to carry out this aspect of the Council's activities. They are carefully selected on the basis of their interest, knowledge, and experience in the field of medical education, and their ability to represent the Council with firmness, tact and diplomacy. It is pointed out that this group of physicians are not a policing body in any sense of the word. Their function is to act as consultants regarding intern and resident training programs, helping hospital administrators and medical staffs to analyze and understand their problems, and assisting them toward interpretation of the standards of graduate medical training. The responsibility for reviewing programs of intern and resident training is a very important one, and requires an intelligent and constructive approach. The approval program of the Council depends to a large extent on the efficiency and effectiveness with which its representatives carry out their obligations. The accompanying table presents a comparative analysis of the survey activities of the field staff during the past three years. The activities of the field staff for the period July 1, 1958 through June 30, 1959 were less than for the two previous years due to the fact that the Council's field staff was not operating at full strength. The augmentation of three part time represenatives and an appointment made during the year to fill a vacancy will enable the Council to continue its past performances.

	1957	1958	1959
Total Hospitals Visited	793	915	775
Internships Reviewed	288	421	298
Residencies Reviewed	1,922	2,168	1,759
Total Programs Reviewed	2,210	2,589	2,057

Status of Residencies in General Surgery of Less Than Three Years' Duration

The Council has directed the staff to undertake a thorough and detailed study as to the effectiveness of these residency programs through a survey of the present activities of physicians trained in those programs over the past several years. These programs were created for the specific purpose of providing additional facilities for general surgical training for those physicians contemplating advanced training in the surgical specialties. The statement has been expressed that there is little evidence available to the surgical specialty boards that a significant number of physicians certified in a surgical specialty have received their general surgical training in these types of residency programs. It is, furthermore, known that a high percentage of the residents in such programs of less than three years' duration are foreign medical graduates. A thorough study should indicate whether such a category of surgical programs is worthy of continued approval.

Revision of Essentials

ESSENTIALS OF APPROVED RESIDENCIES

Dermatology.—It was brought to the attention of the Council by the Residency Review Committee for Dermatology that the Essentials contain a statement pertaining to quantitative requirements for training in Dermatology which is unrealistic and not in effect a requirement for certification by the American Board of Dermatology. The Essentials specify that ordinarily a minimum of 1,500 new outpatients a year is considered essential in the dermatologic division and a similar number in syphilology. The Council recommended deletion of this section in the Essentials which is being referred for the information of the House of Delegates.

ESSENTIALS OF AN ACCEPTABLE SCHOOL OF MEDICAL TECHNOLOGY

The Council on Medical Education and Hospitals submits for the approval of the House of Delegates a revision of the Essentials of an Acceptable School of Medical Technology. With the exception of increasing the quantitative requirements from 35,000 to 50,000 procedures per year the changes recommended are all of an editorial nature. The complete revision is included in Appendix A.

Postgraduate Medical Education

The collection of information, its study and publication relative to needs and activities are continuing in this important part of medical education that involves continuing education for physicians in practice. The 30-month study of the 1956-1957 postgraduate courses culminated in the report, "A Geographically Oriented Study of Postgraduate Courses and Enrollments in the United States for Physicians During the Year 1956-1957", J. A. M. A. **170**:206-219 (May 9) 1959. It provided new information about the marked mobility of physicians enrolling in postgraduate courses, presented the distribution of subjects of courses, pointed out the important role that medical schools have in attracting physician enrollments, and outlined a "threshold factor" that may have some significance. The data and conclusions were based on a large representative sampling of 695 courses in which there were 20,432 enrollments. It is expected that this study will continue to be of interest and use to all those who are concerned with the planning of postgraduate courses. Its data emphasized the importance of regional and national conceptions in this field rather than confining the planning within each state, as has often occurred in the past, without regard to the educational opportunities elsewhere in the region and nation.

The annual listing of postgraduate courses for the year Sept. 1, 1958–Aug. 31, 1959 was published in The Journal August 16, 1958 (J. A. M. A. **167**:1953-2009). The 55 page list contained 979 postgraduate course listings under 42 categories by 212 sponsoring institutions and organizations. If the scheduled repeated offerings of courses are added (421), the total number of courses listed was 1400. Also included in that number of The Journal was the full text of the Internal Revenue Service regulation governing tax deduction of expenses of postgraduate education.

Because more than 90 per cent of the courses that eventually came to the attention of the Council were included in the annual listing, only one supplementary listing was published, J. A. M. A. **169**:1344-1345 (March 21) 1959. As sponsors of such educational opportunities have become aware over the past several years of the advantages to them, and to the educational worth of the courses, of long-range advance planning and the submission of information about the courses to the Council well in advance, a greater proportion of the total course-type educational opportnuities have been included in the list each year. Because it is the consensus of most of those working in continuation medical education that a single annual listing of postgraduate courses is more likely to bring useful information to the attention of potential physician enrollees than does listing in random issues of The Journal, it is expected that supplementary notices of postgraduate courses will not be published in The Journal after the September 1, 1959-August 31, 1960 listing appears in The Journal August 15, 1959. Such a single annual listing that has now become practicable will also make it possible to develop a selective listing when a suitable appraisal mechanism is fully developed.

The *ad hoc* Advisory Committee on Postgraduate Medical Education recommended to the Council in 1957 that there be developed and tested an approach that would secure better information about the educational resources and practices of the institutions and organizations active in postgraduate medical education, particularly of the course type, and outlined such a procedure. The Council endorsed this recommendation in its annual report to the House of Delegates at Philadelphia in December, 1957, and the House approved the report. Therefore, in 1958 the Council authorized the staff to proceed on a large-scale pilot study of the postgraduate educational resources of the active institutions and organizations and the application of this information to the preparation of an unpublished selective listing in order to ascertain how such a procedure would work out. That study, involving questionnaires and field visits, is still in progress. On completion, the results will be studied by the *ad hoc* Advisory Committee and then by the Council. It is probable that further recommendations in this regard will be ready for consideration by the House of Delegates within the next year. As has previously been pointed out by the Council, it is important that there be a due regard to the flexibility in approach especially needed in this phase of medical education. It is also the consensus, with which the House of Delegates apparently agreed in its approval of the 1957 and 1958 annual reports, that the present annual list of unappraised courses actually may be injuring the chances of raising educational standards in this field by giving tacit approval to some unsatisfactory activities. It is known that high quality courses stimulate physicians to seek further education of that type, while discouraging such an attitude is the physician's justifiable disappointment at the organization, quality, content, or methodology of a poor course. The development of a continuing appraisal program, carefully conceived and flexibly implemented, that influences the annual list would almost surely provide an additional incentive for the sponsors of programs to increase their educational merit as well as indicate those courses which are educationally worthy of a physician's time and money.

Education in Related Fields

In recognition of the important contributions by professional and technical groups closely related to medicine to advances in knowledge, education, research, and the provision of comprehensive care to patients under the direction of physicians, the Council is responsible for continuous study and liaison on educational matters in a number of fields related to medicine. Continuing advice and assistance are given the Council by numerous medical organizations, such as the American Society of Clinical Pathologists and the American College of Radiology, as well as nonmedical professional and technical societies, in the development of sound criteria for training and approval of curriculums. The Council is currently engaged in approval of schools for medical record librarians, medical record technicians, medical technologists, occupational therapists, physical therapists, and x-ray technicians. Several hundred survey-visits are made annually to schools of medical technology and x-ray technology by pathologists and radiologists, who are appointed by the American Society of Clinical Pathologists and the American College of Radiology, respectively. These physicians generously contribute their time and experience to make these visits without remuneration. The education director of the American Association of Medical Record Librarians effectively surveys educational programs in universities and hospitals for medical record librarians and technicians. Jointly constituted survey teams of physicians representing the AMA and therapists representing the American Occupational Therapy Association and the American Physical Therapy Association are active in evaluation and survey of medical schools, colleges, universities, and hospitals seeking initial and continued approval for occupational therapy and physical therapy curriculums. As of June 30, 1959, there were 1,418 approved schools, which included 28 for medical record librarians, 12 for medical record technicians, 703 for medical technologists, 29 for occupational therapists, 38 for physical therapists, and 608 for x-ray technicians.

Committee Activities of the Council

Numerous standing and special committees of the Council are assigned to designate functions and are engaged individually or in cooperation with other organizations or departments of the American Medical Association with certain areas of its activity in conducting studies, submitting reports and recommendations, or conducting delegated responsible assignments.

COMMITTEE TO STUDY MEDICAL AND RELATED PROFESSIONS AND SERVICES

A jointly constituted Board of Trustees–Council Committee, with representation from the Council on Mental Health, formerly entitled the Joint Committee to Study Paramedical

Areas in Relation to Medicine, has under active study an exploration of ways in which closer liaison might be developed between physicians and closely related professional and technical groups. The progress reports of this Committee are presented to the House of Delegates by the Board of Trustees.

Advisory Council on Medical Education

The Council, with approval of the Board of Trustees, has accepted membership in the Advisory Council on Medical Education. This is not an action group, but an agency primarily established for the purpose of providing a forum within which agencies which have a particular reason for being interested in medical education might discuss this mutual interest and advise regarding problems that may be related thereto. The purpose of the Advisory Council, as stated in its Constitution and Bylaws, reads:

> The Council is created to meet the need of a central agency representing the universitites, medical schools, hospitals, licensing bodies, specialty boards, public health agencies, and other national organizations in this country which deal with different phases of medical education. The Council shall serve as a clearinghouse for the cooperative consideration of those problems and programs of professional training with which more than one group is concerned; as a medium for consultation and mutual assistance in the formulation and support of adequate educational standards; and as an agency for the advice and recommendations to member and other organizations dealing with medical education.

COMMITTEE ON PREPARATION FOR GENERAL PRACTICE

This Committee constituted a study group of representatives of the Council, the Association of American Medical Colleges, the American Academy of General Practice, and representatives of the specialty areas. The final report of this Committee, including a two-year graduate program designed to provide opportunity for adequate preparation of the future physician to provide medical care for all members of the family, was presented to the House of Delegates in June 1959 and was approved. Although the Committee completed its assignment and requested that it be discharged, the House of Delegates requested that the Committee hold itself in readiness to be of assistance to the Council on Medical Education and Hospitals in implementing this basic program in preparation for family practice.

JOINT TOP-LEVEL COMMITTEE

It was considered highly advantageous to all concerned to establish a "top-level" liaison between higher education and organized medicine to consider some of the mutual areas of concern. Such a committee was appointed and held its first meeting of an informal nature on February 5, 1959. The Committee consists of three representatives from the Board of Trustees of the American Medical Association, three from the Council on Medical Education and Hospitals, three from the Association of American Medical Colleges, and two University Presidents. This Committee will concern itself with ways and means where difficulties and/or misunderstanding created by the changing situations may be avoided or resolved. Such cooperative liaison carries great potential for avoiding in the future some of the difficulties which might have been obviated through more adequate objective intercommunications in the past. Future meetings of the Committee will be prepared on a formal basis to deal with currently acute problems as they arise.

STANDING COMMITTEES

Liaison Committee on Medical Education.—This committee includes representation from the Council on Medical Education and Hospitals and the Executive Council of the Association of American Medical Colleges. The activities of this committee have been broadened to include all studies pertaining to medical education whether initiated by the Council or the Association of American Medical Colleges. For the second consecutive year an effort has been made to include in one questionnaire sponsored by the Liaison Committee on Medical Education all data pertaining to medical education used as the basis for the annual Education Number of The Journal and data needed by the Association of American Medical Colleges. Another of its responsibilities is the joint medical school accreditation program of both organizations. This Liaison Committee serves a very important function in intercommunication and cooperation between the two parent organizations.

Liaison Committee with the Advisory Board for Medical Specialties.—The major function of this committee is to keep abreast with matters of mutual interest and to collaborate in planning for the Annual Congress on Medical Education and Licensure. In February 1959, the American Medical Association, through its Council on Medical Education and Hospitals, was made a participating member organization of the Advisory Board for Medical Specialties. Though the Council on Medical Education and Hospitals is now represented on the Advisory Board, this liaison committee arrangement will be continued as long as necessary in order to continue to maintain close cooperation with the specialty areas of medicine represented on the Advisory Board for Medical Specialties.

Committee on Essentials.—At an all day session held just prior to the meetings of the Council, this Committee, consisting of representatives from the Council and its staff, carefully reviews suggested revisions and recommendations regarding the Essentials and Guides underlying the various educational programs involving approval or accreditation by the Council. The deliberations of this Committee are incorporated in a recommendatory report to the Council, and all major actions approved by the Council are reported to the House of Delegates for their approval.

Residency Review and Conference Committees.—Each committee includes representation of the particular specialty board and the Council on Medical Education and Hospitals, and in certain instances representation from the American College of Surgeons, the American College of Physicians, and the American Academy of Pediatrics. They meet from one to three times annually to review and take action concerning approval of graduate education and training programs in their respective fields. These committees have also in certain instances prepared "Guides" to assist individuals and institutions in planning and developing graduate education and training programs as well as aiding field staff personnel in determining those aspects of the program which require special evaluation. Notable among these guides is the "Guide Book for Residency Programs in General Surgery" approved by the American Board of Surgery, the American College of Surgeons, and the Council, and the three "Guides" for residencies in Aviation Medicine, Occupational Medicine, and Public Health, formulated by the Residency Review Committee for Preventive Medicine and approved by the American Board of Preventive Medicine and the Council. Currently under development is a "Guide to Residency Training Programs in Pediatrics" and a "Guide for Residency Programs in Internal Medicine". Council staff personnel function as secretaries of each of the committees and conduct their administrative activities. Committees have been established in 17 specialty areas and include:

Residency Review Committee for Anesthesiology
Residency Review Committee for Dermatology
Residency Review Committee in Internal Medicine (tripartite)
Residency Review Committee for Neurological Surgery
Residency Review Committee for Obstetrics and Gynecology (tripartite)
Residency Review Committee for Ophthalmology
Residency Review Committee for Orthopedic Surgery
Residency Review Committee for Otolaryngology (tripartite)
Residency Review Committee for Pediatrics (tripartite)
Residency Review Committee for Physical Medicine and Rehabilitation
Residency Review Committee for Plastic Surgery (tripartite)
Residency Review Committee for Preventive Medicine
Residency Review Committee for Proctology
Residency Review Committee for Psychiatry and Neurology
Residency Review Committee for Radiology
Conference Committee on Graduate Training in Surgery (tripartite)
Residency Review Committee for Urology

Residency Review Committee in General Practice.—In liaison with the Commission on Education and Hospitals of the American Academy of General Practice, the Council has established a Residency Review Committee in General Practice.

Internship Review Committee.—This committee, with representation from the Council on Medical Education and Hospitals, the American Academy of General Practice, the American Hospital Association, the Association of American Medical Colleges, and the Federation of State Medical Boards now reviews all new applications for internship approval or further extension of approval of existing programs and recommends action regarding their status to the Council. This committee also meets just prior to the scheduled business meetings of the Council.

Advisory Committee on Physical Therapy Education, and the Advisory Committee on Occupational Therapy Education.—Each of these important committees functions as the major advisory group to the Council on appraisal of educational programs and suggested revisions in criteria for training. Each group is composed of multiple representation from groups interested in the field with Council staff personnel conducting its administrative functions.

Ad Hoc Advisory Committee on Postgraduate Medical Education.—This committee has served in an ad hoc capacity to the Council for several years. Its current activities are described in the section of this report entitled "Postgraduate Medical Education."

Liaison Committee with the Council on Medical Service

During the year the Secretary of the Council received the necessary administrative clearance for the development of a permanent liaison arrangement with the Council on Medical Service. It was recognized that there were areas within the American Medical Association where it is difficult to delineate clearly between medical education and medical service and it was agreed that a permanent liaison committee be established between the two Councils for discussion of areas of mutual concern. The first meeting of this Committee was held on February 6, 1959.

Annual Congress on Medical Education and Licensure

The 55th Annual Congress on Medical Education and Licensure was held in Chicago February 8-9, 1959, attended by 1209 physicians, educators and representatives of state licensing boards. This was over 200 more than the record breaking registration in 1958. As has been the case in the past, the program was designed to focus on selected problems in medicine and medical education from a broad viewpoint, with the intent of providing a forum from which the problems could be more clearly defined so that their answers could more reasonably be sought. The areas considered during the discussions of the 55th Congress were the significance of specialism in medicine to medical education, and the role of research in the education of all physicians. Selected papers of the Congress were published in the May 16 and May 23, 1959 numbers of The Journal and collected tear sheet copies were forwarded to all members of the House of Delegates.

In order to explore most thoughtfully the problem presented by increasing specialism in medicine, background papers were presented during an initial plenary session, followed by a half-day of open conference discussions in four groups, and the presentation of the outcome of these discussions in a final half-day plenary session. The active participants included the Chairman of the Council, the President of the Advisory Board for Medical Specialties, university educators outside medicine, medical educators, specialty board members, licensing board members, representatives of the medical profession at large, hospital directors of medical education, and residents themselves.

It seemed that the time had come when medicine as a whole and its specialty groups could with benefit re-evaluate carefully the impact of newly acquired knowledge on specialization, its effects on future educational programs, as well as the relation of specialism to the parent disciplines. An intensive effort was made to explore the problems presented by increasing specialism in medicine in relation to the length and nature of educational programs, to the young people in training, the tendencies toward and away from rigidity of requirements and the significance of this, as well as the import of these on the care of the patient.

The four afternoon open conference-workshops were held on specialism in medicine from the standpoints of (1) the residency program itself, (2) the specialty board, (3) the resident, and (4) the hospital. Those discussions were reported to the second plenary session the following afternoon.

The role of research in the education of all physicians was the subject of papers and discussion during the morning session of the second day of the Congress. Following a background paper by the president of the University of Wisconsin, a noted biochemist, the role of research and its relationship to teaching and patient service were presented from the standpoint of the first two years of medical education, the last two years of medical school, the internship and residency period, the teacher himself, and the practitioner of medicine. The impact on educational programs of ready money for research as compared to sparse money for teaching was the keynote of the paper, "Maintenance of the Synergistic Relationship of Education and Research in Medicine," by Dr. James A. Shannon, Director, National Institutes of Health and Assistant Surgeon General, U.S. Public Health Service.

The 56th Congress on Medical Education and Licensure in keeping with long standing tradition will be convened in Chicago in February 1960. It is presently proposed that this next Congress focus on "The Role of Patient Care in Medical Education" and "The University Orientation of Medical Education." These two themes are of great significance to medical education and should serve as a challenging basis for a stimulating meeting.

WORKSHOP CONFERENCE FOR HOSPITAL DIRECTORS OF MEDICAL EDUCATION

On January 16 and 17, 1959 the Council on Medical Education and Hospitals and the Executive Council of the Association of American Medical Colleges cosponsored with the American Hospital Association a conference in Chicago to which were invited representatives of the Association of Hospital Directors of Medical Education. The purpose of this conference was to attempt to define the role of the director of medical education in a hospital with approved graduate training programs, and also to orient representatives of the national bodies most concerned as to the objectives of the Association of Hospital Directors of Medical Education. This was a very productive conference, and it was clear that the Association of Hospital Directors of Medical Education is not an organization striving to change existing standards of graduate education but is one which hopes to support the same high standards for graduate training in non-university-affiliated hospitals as now exist in affiliated hospitals. The result of the final summary session of the conference will be published by the American Hospital Association in the near future.

CONTINUING MAJOR STAFF ACTIVITIES

The major continuing responsibilities of the staff are:

(1) To bring to the attention of the Council those matters which it believes should warrant modification of the published acceptable standards in medical education;

(2) To modify published statements of acceptable standards in compliance with decisions of the Council (for later approval by the House of Delegates);

(3) To arrange and participate in the periodic reviews of educational programs in medicine;

(4) To present to the Council information regarding the programs reviewed so that the Council may have accurate and dependable data on which to base its decisions in ful-

filling its function as the American Medical Association's accrediting agency;

(5) To prepare and publish annual reports which serve to discharge the Council's function of informing the medical profession of the status of medical education in the United States. These reports also serve as public notification of educational programs which are approved and are of great value to students and graduate physicians in selecting those programs in which they wish to participate;

(6) To serve as a central clearing house of information regarding medical education.

OTHER RESPONSIBILITIES OF COUNCIL MEMBERS AND ADMINISTRATIVE STAFF

Members of the Council and/or its staff actively participate as members or officials of other organizations concerned with problems closely related to or impinging upon the field of medical education, such as:

Joint Commission on Accreditation of Hospitals
National Intern Matching Program
National Fund for Medical Education (Advisory Council)
American Medical Education Foundation
National Board of Medical Examiners
Federation of State Medical Boards of the United States (Bulletin)
Council on Professional Practice of the American Hospital Association (Liaison)

The Council and its staff collaborate with many organizations and agencies which have an interest in one or more aspects of medical education. Intercommunication between the Council and these various groups directed toward mutual understanding and collaboration is one of the demanding functions of the Council in terms of time, energy and basic significance from the standpoint of professional and public relations.

Changes in Council Staff

In February, 1959, after serving more than five years as secretary of the Council, Dr. Edward L. Turner accepted the newly created post of Director of the Division of Scientific Activities. Dr. Turner's experience as clinician, medical teacher, medical school dean and college president served to make his tenure of office as Council Secretary a period of particular productiveness for the Council's functions. Dr. Walter S. Wiggins, Associate Secretary of the Council since 1954, was appointed as Dr. Turner's successor.

During the course of the year, Dr. Morris Wiess resigned his position as member of the Council's Field Staff to accept the post of Medical Director of the Mandel Clinic of the Michael Reese Hospital in Chicago. Dr. M. Eleanor Blish of Houston, Texas was appointed a full time member of the Field Staff. Prior to accepting this position, Dr. Blish had been in the private practice of pediatrics and a teacher in pediatrics at Baylor University College of Medicine.

At the close of the year covered by this report, arrangements were completed to retain as Field Staff members on a half time basis, three physicians who have had distinguished professional careers. Dr. William W. Fellows has had experience in the private practice of surgery, as a faculty member of the medical schools of the University of Pittsburgh, Albany, and Northwestern University and most recently as Assistant Chief Medical Director of the Veterans' Administration Department of Medicine and Surgery. Dr. Fellows is a diplomate of the American Board of Surgery.

Dr. Winchell Craig was associated with the Mayo Clinic for many years and served as head of the Section on Neurosurgery. He is emeritus professor of neurosurgery of the Graduate School of Medicine of the University of Minnesota and is certified by the American Board of Surgery, Neurological Surgery, and Psychiatry and Neurology.

Dr. George H. Miller was on the faculty at Iowa University's College of Medicine and served as dean of the School of Medicine at the American University of Beirut. He has been Director of Education and Assistant Director of the American College of Surgery and is a diplomate of the American Board of Internal Medicine.

The experience of these individuals in medical education in general and graduate medical education in particular promises to strengthen greatly the important field activities of the Council in surveying and bringing consultative services to hospital internship and residency programs.

Respectfully submitted,
Leland S. McKittrick, M.D., *Chairman*
James M. Faulkner, M.D., *Vice Chairman*
Warde B. Allan, M.D.
John Z. Bowers, M.D.
W. Andrew Bunten, M.D.
Guy A. Caldwell, M.D.
John W. Cline, M.D.
Harlan English, M.D.
Charles T. Stone, Sr., M.D.
W. Clarke Wescoe, M.D.
Walter S. Wiggins, M. D., *Secretary*

Appendix A

ESSENTIALS OF AN ACCEPTABLE SCHOOL OF MEDICAL TECHNOLOGY

Prepared by the Council on Medical Education and Hospitals of the American Medical Association with the Cooperation of the Board of Schools of Medical Technology and the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists, and the American Society of Medical Technologists

PREAMBLE

Three organizations are primarily concerned with the training of medical technologists, the Council on Medical Education and Hospitals of the American Medical Association, the American Society of Clinical Pathologists, and the American Society of Medical Technologists. Two Boards of the American Society of Clinical Pathologists represent this Society. The Board of Schools of Medical Technology is primarily concerned with the evaluation and inspection of schools of medical technology, acting in an advisory capacity to the Council, assisting also in the maintenance of high standards of education and in the development of new schools of medical technology. The Board of Registry of Medical Technologists investigates and certifies the competency of the technologists.

The Council, with the cooperation of the Board of Schools of Medical Technology, the Board of Registry of Medical Technologists, and the American Society of Medical Technologists, has established the following standards for this type of training for the information of schools, physicians, hospitals, prospective students, and others and for the protection of the public.

Technologists are being trained in these schools to work under the direction of qualified physicians asd not as independent practitioners.

I. Administration

1. Acceptable schools for training medical technologists may be conducted by approved medical schools, hopsitals, or other acceptable laboratories suitably organized in accordance with present educational standards.

2. All training of technologists shall be under competent medical control.

3. Resources for continued operation of the school should be insured through regular budgets, gifts, or endowment, but not entirely through students' fees. Experience has shown that commercial schools operated for profit frequently do not adhere to proper ethical and educational standards and therefore are not acceptable.

II. Organization

4. Adequate space, light, and modern equipment should be provided in the laboratory department. A library containing up-to-date references, texts, and scientific periodicals pertaining to clinical laboratory work and pathology should be maintained, or be readily accessible to the institution.

5. Satisfactory record systems should be provided for all work carried on in the department. Monthly and annual classifications of the work of the department should be prepared.

6. Transcripts of college credits and other credentials must be available. To insure appropriate subsequent registration it is essential that evaluation of entrance credits be obtained from the Board of Registry of Medical Technologists. An acceptable school keeps records of each student's attendance and grades and it is also recommended that the tests performed be recorded. In addition, the school has a synopsis of the complete curriculum on file, a copy of which is submitted to the Council on Medical Education and Hospitals. This curriculum should include the rotation of assignments, the outline of the instruction supplied by the laboratory and a list of the prepared specimens which are used to augment the experience of the student.

7. At least two or more students should be enrolled in each class.

III. Faculty

8. The school should have a competent teaching staff. The director must be a graduate in medicine who is certified in clinical pathology by the American Board of Pathology or who has had training and experience in clinical pathology acceptable to the Council. He shall take part in and be responsible for the actual conduct of the training course. He shall be in daily attendance for sufficient time to supervise properly the laboratory work and teaching.

9. In laboratory practice the enrollment may not exceed two students to each member of the teaching staff. The staff *must* include not less than one instructor whose duties include supervising the teaching program and who possesses a Bachelor's degree, is a registered medical technologist (ASCP) and who has had three years of experience or its equivalent. This is in addition to the laboratory director. In order to be considered as an instructor, a technologist should be a registered medical technologist (ASCP) and should preferably have at least one year of experience or its equivalent. Members of the hospital staff or visiting instructors must have regular assignments that cover a complete course prescribed in these essentials.

IV. Prequisites for Admission

10. In order to conform to Board of Registry of Medical Technologists requirements for admission to examination the following admission requirements should be fulfilled prior to being accepted in an approved school. Two years, 90 quarter hours, or 60 semester hours of college work in a college or university accredited by a recognized standardizing association. During the two years the following courses must be taken: (1) Eighteen quarter hours or twelve semester hours of biology which may include general biology, bacteriology, parasitology, physiology, anatomy, histology, embryology, and zoology (bacteriology is especially recommended); (2) One full academic year (a minimum of nine quarter hours or six semester hours) of beginning inorganic chemistry, which may include qualitative analysis, including lectures and laboratory; and in addition a minimum of four quarter hours or three semester hours of either quantitative analysis, organic chemistry or biochemistry, including lectures and laboratory, (quantitative analysis is especially recommended); (3) Electives sufficient to give a total of ninety quarter hours or sixty semester hours of college credit. The following courses are highly recommended but they are not required: physics, a course in general mathematics, and typing.

11. Only those individuals having the above educational requirements may participate as students in this entire program. Schools are encouraged to accept only students having three years of college and to participate in affiliated programs leading to a degree.

12. Effective January 1, 1962, the pre-technical educational requirements for admission to a school of medical technology approved by the Council will be increased from two years (sixty semester or ninety quarter hours) to three years (ninety semester hours or one hundred and thirty-five quarter hours) to include additional courses to broaden the science background.

V. Curriculum

13. The course of training should not be less than twelve months in duration and should include the following subjects: biochemistry, hematology, bacteriology, parasitology, histologic technic, serology, urinalysis, blood banking, basal metabolism, and miscellaneous clinical microscopy.

14. The instruction should follow a planned outline similar to "A Curriculum for Schools of Medical Technology" of the Board of Registry of Medical Technologists and should be accomplished by text assignments, lectures and discussions, demonstrations, supervised practice, quizzes and written, oral and practical examinations.

VI. Clinical Material

15. Each student should receive practice training, adequate in kind and amount, under competent supervision. Participating hospitals should be registered and be otherwise acceptable to the Council on Medical Education and Hospitals of the American Medical Association. Approved schools should have available laboratory material equivalent to that provided by a hospital of 100 beds and 3,000 yearly admissions and a minimum of 50,000 tests a year with a distribution of clinical material sufficient to provide adequate technical training in the various laboratory divisions.

VII. Ethics

16. Excessive fees and commercial advertising should be considered unethical.

17. Schools conducted primarily for the purpose of substituting students for paid technologists will not be considered for approval.

VIII. Health

18. Applicants shall be required to submit evidence of good health and successful vaccination, and a report of a medical examination should be a part of the students' records. This examination shall include a roentgen examination of the chest. Provisions should be made for medical care and hospitalization, when necessary, for a reasonable length of time.

IX. Admission to the Approved List

19. Application for approval of a school for the training of technologists should be made to the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois. Forms will be supplied for this purpose on request and should be completed by the director of the laboratory requesting this approval. Inquiries regarding the registration of qualified medical technologists should be addressed to the Board of Registry of Medical Technologists, Post Office Box 44, Muncie, Ind.

20. Approval may be withdrawn whenever in the opinion of the Council a school does not maintain an educational service in accordance with the above standards. Whenever a training program has not been in operation for a period of two consecutive years, approval may also be withdrawn.

21. Approved schools should notify the Council on Medical Education and Hospitals whenever a change occurs in the directorship of the school.

REPORT OF THE COUNCIL ON MEDICAL SERVICE

This report covers the activities of the Council and its seven committees during the period from July 1, 1958, to June 30, 1959. Through numerous meetings, staff travel, review of literature, and personal communication, the Council has kept itself informed on the many facets of the economic and social aspects of medical care. Through newsletters, exhibits, pamphlets, regional conferences, and the various American Medical Association communications media, the Council has endeavored to transmit this information to the medical profession.

One of the major changes that has occurred in the Council's ranks during the year has been the retirement of Dr. Joseph D. McCarthy as chairman of the Council. As a member since 1948, Dr. McCarthy has worked with and led the Council through these years of major evolution in medical care. He has given unselfishly and unstintingly of his time to the medical profession in his work with the Council and the many committees on which he has served. Because of his years of experience the Council has requested the privilege of having Dr. McCarthy serve as a consultant. Words cannot convey suitable recognition for the devotion Dr. McCarthy has displayed; nevertheless, the Council wishes to have its appreciation to him recorded in these official proceedings.

The Council is of the opinion that it is vital to the Association to call on physicians with a wide variety of experience and viewpoints to formulate policies which will ultimately result in the best possible care for the public and in policies most satisfactory to the profession as a whole. With this in mind the members of the House will note the wide geographic representation as well as the wide representation from the standpoint of types of practice of the physicians serving on these "policy suggesting" committees of the Council. This diversity of private practice viewpoints strengthens the Association and provides a personal rapport with physicians in many areas of the country.

Vacancies occur on these committees from time to time, and so the Council would welcome suggestions from any member of the House for physicians with interest and ability to serve on committees dealing with medical facilities, indigent care, maternal and child care, medical care for industrial workers, federal medical services, insurance and prepayment plans, and aging. To bring new men, seasoned in medical society work, into activities at the national level has an invigorating effect on all concerned.

To the more than 60 physicians currently serving on committees, the Council wishes to extend commendation for their work during the year.

A listing of activities of the Council and its committees would merely be a repetition of the report. Nevertheless, a number of highlights and recommendations should be called to the attention of the House.

1. In the reevaluation of A. M. A. policy in reference to public health activities, indications to date are that the six basic functions contained in this policy no longer approximate the sum total of public health concern.
2. In the study of physicians' offices owned by or adjacent to hospitals, a majority of physicians seem to have no objection to the location of physicians' offices in such facilities.
3. To improve the quality of nursing home care the A. M. A. and the A. N. H. A. have jointly issued "Guides for Medical Care in Nursing Homes and Related Facilities" for distribution to medical societies, nursing homes, and health departments.
4. With six and one-quarter million persons on public and general assistance, costing over $300 million a month of public money, of which $35.5 million was expended in vendor payments to physicians, hospitals, and nursing homes, it behooves the medical profession to take an active interest in this problem and concern itself with the administration of programs, eligibility requirements, financing, and the range in quality of medical services provided. Furthermore, to the extent that financially catastrophic illness precedes pauperization of normally self-supporting patients, medical societies should undertake to study ways and means of preventing such catastrophes.
5. A "Guide for the Study of Perinatal Mortality and Morbidity" has been distributed to state and local medical societies, health departments, and individual hospitals.
6. So long as the V. A. policy prohibits a decrease in the total number of authorized beds, some national policy should be established to insure that non-service-connected care is given first to those who are truly incapable of meeting the costs from their own resources. This calls for (1) a realistic definition of "inability to defray necessary expenses", (2) a realistic estimate of the cost of care, and (3) priority for financially catastrophic cases. These have been spelled out in this annual report as recommendations to the House.
7. Specific recommendations have been made in reference to the care of service-connected disabilities to provide the service-connected patient with a right to choose between private care by a personal physician in the facility of his choice at Federal expense and treatment in a Veterans' Administration facility. Further, it is recommended that the House of Delegates support those state associations, which at present have intermediary contracts for Hometown Care, in their opposition to the curtailment of the medical profession's representation in the administration of these programs.
8. In negotiations with federal agencies it is suggested that each state medical association which has not already done so, consolidate under one committee all responsibility for negotiation with governmental agencies for the private care of patients for whom the government assumes responsibility.
9. In the field of aging, because of the outstanding leadership displayed by the medical profession at the local, state, and national levels, non-medical groups active in this field are turning increasingly to the profession for guidance. Continued leadership in this sphere is of paramount importance and can only be maintained by the active participation of physicians in various programs for aging throughout the country.
10. To stimulate increased physician activity in health maintenance programs for their patients the Committee on Aging has developed a "Periodic Health Appraisal Form" which is available on request from American Medical Association headquarters.
11. Also in the field of aging, the Committee on Aging and the Council stress the need for physicians to assume an active role, individually and through their medical societies, in the pre-planning conferences for the 1961 White House Conference on Aging.
12. Voluntary health insurance and prepayment programs continue to expand both in enrollment and in scope of benefits. During the past few years there has been an annual increase of roughly 1½ million subscribers for hospitalization, 2½ million for surgical expense, and 3½ million for medical expense benefits. Under the newer types, major hospital and medical expense benefits and "comprehensive" coverages, the rates of growth have been much greater. The aggregate amounts (benefits) paid by health insurance and prepayment plans for health care are increasing at a more rapid rate than the increases in the number of persons insured.
13. State associations, component societies, local plans, and private insurance carriers have responded realistically to the action of the House in Minneapolis calling for increased insurance and prepayment coverage for the aged who are living on reduced incomes and have modest resources. A detailed report on this response will be submitted in a Supplementary Report at the Clinical Session. During its relatively brief tenure this Committee has accomplished a great deal.
14. Forty-eight state medical associations now have actively functioning committees on aging.

Committee on Medical Facilities

Since the last report concerning the activities of this Committee, Dr. John M. Rumsey, San Diego, California, was appointed to replace Dr. Edward C. Rosenow, Jr., Los Angeles, California, who now serves as a consultant to the Committee.

Other members are Drs. Willard A. Wright, Chairman, Williston, North Dakota; William F. Costello, Dover, New Jersey; Robert L. Novy, Detroit, Michigan; David Henry Poer, Atlanta, Georgia; W. C. Stover, Boonville, Indiana; and Walter E. Vest, Huntington, West Virginia.

The Committee has met on four occasions—September 27-28, 1958, in Chicago; December 5, 1958 in Minneapolis; February 18-19, 1959 in Cincinnati, Ohio; and April 25-26, 1959 in Chicago.

NAME OF COMMITTEE

In the interest of clarity and brevity, the name of this Committee has been changed from Committee on Medical and Related Facilities to *Committee on Medical Facilities.* This name change was authorized by the Council on Medical Service and the Board of Trustees in June of this year.

MAJOR STUDIES

Background: In November 1956 the Board of Trustees authorized the Council on Medical Service to make the following studies:

1. To strengthen the American Medical Association as an organization for all doctors of medicine, it is suggested that a study be made to evaluate the relationship of physicians who are not in private practice of medicine to those in private practice.
2. To provide leadership in the extension of local public health services throughout the nation, a study shall be made to analyze the growth and present status of local health units and relationship of these services to the private practice of medicine.

The Council, through its Committee on Medical Facilities, was directed to proceed with the studies.

Part One—"Study of Organizational and Professional Relationships Between Physicians in Private Practice and Those Not in Private Practice".

In this study, the answers to the following four questions are sought:

1. What has been the growth in the number of physicians not in private practice?
2. If substantial growth is evident, what is its import?
3. To what extent do intra-professional problems exist between private and non-private practitioners?
4. What steps should be taken by organized medicine to strengthen the A. M. A. as an organization for all doctors of medicine?

Part Two—"Study of the Growth and Present Status of Public Health Services".

Scope of Study: The scope of Part Two is to re-evaluate the 1950 House of Delegates' policy statement which lists six basic services to be provided by public health authorities.

1. Vital statistics
2. Public health education
3. Environmental sanitation
4. Public health laboratories
5. Prevention and control of communicable diseases
6. Hygiene of maternity, infancy and childhood, if private facilities are unavailable.

To date indications are that the "basic six" no longer approximate the sum total of public health concern. In addition to these traditional services, many public health authorities are now interested in diabetes control, cancer control, rheumatic fever prophylaxis, indigent medical care, mental health, heart disease and accident prevention.

Present information concerning the scope of public health services is fragmentary and provides no clear insight of the impact of this expanding pattern of services on the private practice of medicine. Thus, the objective of this study is two-fold: (a) to take an inventory of public health services in order to determine its present status and emerging patterns and (b) to redefine the relationship of public health to private practice.

Study Auspices: Since this represents an evaluation of the *American Medical Association's concept of public health,* it was decided the study should be under the direct financial and administrative control of the Committee on Medical Facilities, rather than under joint sponsorship of organized public health groups. However, because of the nature of the study, consultants from the public health field have been selected to assist the Committee and staff:

1. American Public Health Association—Thomas Hood, M.D. (Deputy Director)
2. Public Health Service—John Porterfield, M.D. (Deputy Surgeon General)
3. Association of State and Territorial Health Officers—Wilson Sowder, M.D. (Health Officer, Florida)
4. American Association of Public Health Physicians—L. L. Fatheree, M.D. (Vice President)
5. Local Health Officer—Joseph Molner, M.D. (Health Officer, Wayne County, Michigan)

The Committee will also seek the assistance of other departments within A. M. A. Headquarters.

Study Methodology: The Committee is following essentially the methodology employed for the Hill-Burton study:

1. Review of existing data on public health activities. All periodicals, books and manuscripts were checked for pertinent material. This research is compiled and will be incorporated in the final report.
2. Field trips and conferences to obtain a cross section of professional views on metropolitan, urban, and rural public health services and trends.

STUDY OF PHYSICIANS' OFFICES OWNED BY OR ADJACENT TO HOSPITALS

This study is being done as a result of a resolution submitted to the House of Delegates. It is concerned with the possible impact on medical practice of great expansion of physicians' offices owned by or adjacent to hospitals. While many areas do have such facilities, there are only a few in which any substantial percentage of physicians actually have their offices so located. The nine major areas with a concentration of such facilities selected for the survey are:

Memphis, Tennessee
Houston, Texas
Philadelphia, Pennsylvania
Los Angeles, California
Atlanta, Georgia
Hartford, Connecticut
Chicago, Illinois
Rockford, Illinois
Grand Rapids, Michigan

In surveying these areas, the Committee is seeking answers to the following questions:

1. Does the hospital with which you have primary affiliation rent such facilities?
2. How does this affect your relationships with other physicians?
3. How does this affect your hospital relationships?
4. Have you any reason to object to this activity by hospitals? If yes, why?

The survey so far seems to indicate that the majority of physicians have no objection to the location of physicians' offices in such facilities. However in each area there is a substantial minority which objects strongly to such arrangements.

NURSING HOMES

As reported in the last Annual Report, the Committee on Medical Facilities has been asked to study activities in the field of nursing homes. The following reports on these activities are for the information of the House.

AMA-ANHA Liaison Committee

For the past three years, this Committee has been coordinating activities in the field of nursing homes. A. M. A. representatives to this Committee are Drs. Willard A. Wright, Williston, North Dakota, Chairman of the Council's Committee on Medical Facilities; Dean W. Roberts, Chicago, Illinois, member of the Council's Committee on Indigent Care; and Frederick C. Swartz, East Lansing, Michigan, Chairman of the Council's Committee on Aging. This Committee has held no formal meetings this past year, but has had many informal meetings and conferences.

A conference was held with representatives of the American Hospital Association, American Nursing Home Association, Public Health Service, Bureau of Public Assistance and the American Medical Association. The meeting was devoted to discussion of the Public Health Service's proposal concerning a classification and numbering system for hospitals and facilities for the chronically ill and aged. The proposal as stated did not meet the approval of the groups represented.

Guides for Medical Care in Nursing Homes and Related Facilities

One of the great needs, not only for the aged but for many others who have chronic illnesses, is improvement in the standards of the nation's nursing homes. Although we have approximately 25,000 nursing homes throughout the United States, far too many are of inferior quality. To improve these facilities the AMA-ANHA Liaison Committee has taken the first step by developing "Guides for Medical Care in Nursing Homes and Related Facilities":—

Preface

The United States today has over 25,000 in-patient facilities other than general hospitals with an estimated capacity of 450,000 beds. These facilities have been grouped under the category of "nursing homes". More than 20,000 of these facilities are proprietary, or commercially owned, accounting for some 232,000 beds. The remainder are under public or non-profit ownership, and account for approximately 218,000 beds.

Grouped under this term "nursing homes" are facilities ranging from children's convalescent homes to county poorhouses, from institutions providing every general hospital service except surgery, to boarding homes providing the simplest of supportive services to relatively well older persons.

Primarily however, these facilities, by whatever name they are called, are caring for people who are old. The average age of patients in all types of facilities is 77. The great majority are over 65.

It is generally recognized that the standards of care in a sizable portion of these facilities can be improved. It is also recognized that the need for such facilities can be expected to increase with the growing number of older persons in our population and the wider use of such facilities for post-hospital convalescent care.

As a service to these facilities, their patients, and the physicians caring for these patients, the following guides for medical care in nursing homes and related facilities have been developed. These guides are suggested to assist physicians in making the best use of such facilities, and to aid administrators of these facilities in seeing that their patients receive proper medical attention.

Nursing Homes with Skilled Nursing Care and Nursing Homes with Skilled Nursing and Personal Care

1. Each patient admitted should have a personal physician who knows of the admission arrangements and agrees to assume responsibility.
2. Each patient admitted should come with a complete history and physical examination, or should have such examination immediately upon entering the home, *including chest x-ray, necessary laboratory work*, an evaluation of his potentialities for rehabilitation, at least to self-care, and full orders for treatment. These orders should be kept up-to-date by daily nursing notes and periodic progress notes by the physician as well as written directives for care and medication as they are changed.
3. Each patient should have periodic visits by his personal physician. The frequency of these visits should be dictated by the medical needs of the patient.
4. Each patient should be served, in case of emergency, preferably by his own physician.
5. Each skilled nursing home should have a principal staff physician or physicians for consultation in general medical policies of the home. He or they would also be available for emergency calls when the patient's regular physician is unavailable. This physician or physicians would also advise the nursing home administrator in matters pertaining to administrative procedures, nursing care, physical or other restorative therapy, special dietary arrangements, storage and dispensing of medications, and medical records.
6. Each skilled nursing home should make every effort to help patients to achieve their fullest potential for self-care, through treatments and procedures ordered by the patient's physician. These procedures may be as simple as early and progressive ambulation, the correction of sight, hearing, dental or orthopedic handicaps with proper appliances, retraining in the activities of daily living, the use of heat packs, or lamps, and simple, graduated exercises for strengthening of affected parts. For the more complicated procedures, skilled nursing homes could well arrange for the part-time or visiting services of a professional therapist to provide (under the direction of the M.D.) direct services and to train the home staff in many simple procedures. The home may even maintain special rehabilitation facilities under the supervision of a professional therapist. Rehabilitation procedures which are beyond the scope of the home should be provided through cooperative arrangements with other appropriate community facilities and agencies.
7. Each nursing home should have arrangements with a near-by general hospital for the transfer with minimum delay of any patient whose condition requires it.
8. Each nursing home should maintain liaison with physicians of the local medical society for the purpose of obtaining consultation and guidance on all matters affecting medical care.
9. Each nursing home should consider using consultative services in nutrition and diet therapy provided by the state health department, or by other agencies or persons qualified to perform such service and should assure that all dietary regimes ordered by the patient's physician are carried out.
10. Each nursing home should be conscious of the dental needs of its patients. A dental evaluation of the patient should be included in the health record. The patient should be seen as often as necessary by his own dentist, if available, or by a principal dentist selected by the home.

Homes for Personal Care and Homes for the Aged

1. Each patient should have named in his admission record a personal physician who could be called in case of need.
2. Any patient who is under physician care should come to the home with written orders by his personal physician for continuing his program of medical care.

3. Personal care and old-age homes should have arrangements with a physician to serve as a medical advisor for the home as a whole and to provide emergency care whenever the patient's own physician is unavailable. This physician should serve as consultant on medical care and related matters such as restorative therapy, special dietary arrangements, storage and dispensing of medications, and medical records.

   In general, the medical activity envisioned as going on in this type of home and this segment of a larger nursing home is equivalent to that type of medical activity provided in an individual's own home.
4. Periodic health examinations are recommended.
5. The maintenance of good mental and physical health is dependent on supervised physical activity and mental exercise and stimulation. Preventive and rehabilitative programs to this end should be the responsibility of the administration in this type of home. If patients are up and about, every effort should be made to keep them ambulatory, through proper diet, preventive exercises, preventing accidents, interesting and stimulating activities and immediate recognition of any signs of deterioration. Every effort should be made to assist bed-bound patients in becoming ambulatory, through progressive bed exercises, and then assistance in getting up for longer periods each day, unless such patients are bed-bound by physician's orders.
6. Nutrition and diet information may be obtained through consultants at the state health department or other appropriate agencies, and all necessary special diets should be arranged for by the home.
7. The patient's dentist should be known and consulted as often as necessary.
8. Personal care and old-age homes should have arrangements with a general hospital for immediate transfer of any resident who needs intensive medical care.

These "Guides" have been approved by the Council on Medical Service, AMA-ANHA Liaison Committee, and the Governing Council of the American Nursing Home Association. To stimulate all concerned, they have been sent to the A. M. A. House of Delegates and Board of Trustees, to all constituent and component medical societies, medical society committees on aging, members of the ANHA, state and local health departments and other related and interested groups. If we are to have top quality nursing homes, physicians and medical societies must take an active part in promoting these "Guides".

REGIONAL HOSPITAL CONFERENCES

During the first half of 1959 the American Hospital Association and the Public Health Service sponsored a series of four regional conferences on the development of principles for planning a future hospital system.

These meetings brought together representatives of state and metropolitan hospital associations, state hospital planning agencies and other related associations and agencies having a direct interest in planning for hospital facilities and services.

The American Medical Association was invited to send three delegates to each of the regional conferences. These meetings were held in Chicago (April 15-17), New Orleans (April 23-25), Salt Lake City (April 30-May 2) and Washington, D. C. (May 13-15).

The workshops for each conference dealt with the following major subjects:

Workshop A—Planning the proper balance between types of patient care facilities.

Workshop B—Planning for distribution of patient care facilities in a related geographic area.

Workshop C—Planning to overcome economic barriers to development and efficient utilization of patient care facilities.

Workshop D—Planning individual hospital facilities with the hospital system of the future.

Although some of the principles adopted by the various groups may not be as acceptable as would be desired, the A. M. A. was very forunate in having a group of spokesmen who did a very effective job of representing the practicing physician. Undoubtedly, the proper role of medicine in providing leadership for the development of community health programs would have been grossly understated had it not been for their efforts.

HILL-BURTON ACTIVITIES

The Rehabilitation Category

The Committee met with the Committee on Rehabilitation to discuss conclusions and recommendations in the Hill-Burton Report relative to the rehabilitation center category. This meeting resulted in the following *recommendations:*

1. That the A. M. A. should go on record as favoring multiple disability type facilities as opposed to single disability type facilities.
2. That the A. M. A. should go on record favoring centers as units which are geographically close to a hospital and which have good administrative liaison with such a facility.

HOMEMAKER SERVICES

A National Conference on Homemaker Services was held in February to stimulate the development of homemaker services throughout the United States.

The Conference was attended by representatives of the Department of Health, Education, and Welfare, voluntary health agencies, state and local health and welfare departments and other interested parties and was divided into five sections:

1. What distinctive needs and purposes can be met by homemaker services?
2. Who needs homemaker services?
3. How do you plan and organize homemaker services?
4. What is good administration in homemaker services?
5. How to develop community understanding and support of homemaker services.

PHYSICIANS PLACEMENT SERVICE

For the past fifteen years physician placement information has been available through the A. M. A. That such information is in demand both by physicians seeking a location and by those seeking the services of a physician, has been proved once again by the volume of requests received by the Physicians Placement Service during the past year. The number of inquiries, in the form of letters, office visits and long distance telephone calls, reached an all time high during the year, July 1, 1958 through June 30, 1959.

During the year 1,340 requests were received from physicians seeking location information and 2,600 were received from communities and others seeking the services of a physician.

Over the past several years the primary emphasis has been one of stimulating all state associations and the larger specialty groups to establish placement services, with the A. M. A. acting as a central clearing house. For communities that want and need a physician, the state placement services (1) work toward informing the community of methods for securing a physician, (2) provide lists of physicians seeking a location, (3) cooperate with local and national organizations interested in the problem, and (4) make available information on the medical needs of a town, to physicians seeking a location.

The increasing number of requests from specialists has brought about an expansion of some placement effort in recent years to supplying information to this group. Calling the ten specialty society placement services to the attention of physicians has been a part of this effort.

This is a service to physicians in several ways: (1) It provides an opportunity to review locations across the country; (2) a direct location to practice may be secured; (3) those who feel the need to relocate can secure information without publicizing their intentions; (4) physicians already in practice may find an associate or additional group members; (5) physicians with the Armed Services overseas have been able to secure information about opportunities so that the paper work involved in screening locations can be started well before the release date; and (6) many foreign trained physicians who have elected to become a part of the American medical profession have been encouraged at finding that this group would offer a helping hand in locating.

During the year a report on activities in this field appeared in the "Medicine at Work" section of THE JOURNAL; the front page of an issue of the *Wall Street Journal* contained a news note; a brief statistical summary was placed in the *AMA News*; the National Association of Retail Druggists carried a full column; *Medical Economics* carried an article on placement; in addition, the subjects, "placement service and management information" were listed with the services enumerated in the folder now being sent with the A. M. A. membership cards; and early this year a small classified advertisement was placed in THE JOURNAL. All of these notices have brought the Placement Service to the attention of more physicians and have resulted in new inquiries.

OTHER ACTIVITIES

Liaison with C.M.E.H.

The Joint Liaison Committee of the Councils on Medical Service and Medical Education and Hospitals met in February. The agenda was composed of two principle items, one of which will be reported in the section dealing with Federal Medical Services.

One item had to do with statements adopted by the Committee on Medical Care plans of the *Association of American Medical Colleges*, having to do with (A) provision for paying full-time clinical faculties for medical services provided to pay patients and (B) provision for paying residents for providing medical services.

In reference to (A) above, the liaison committee reached agreement. In reference to (B) above, the Council on Medical Service representatives were unable to agree with C.M.E.H. or A.A.M.C. that residents should be paid for services rendered to pay patients. Further discussion will be carried on with reference to (B).

Committee on Indigent Care

There has been one change in the Committee membership during the past year. Dr. H. Phillip Hampton of Tampa, Florida, has been added to the Committee to replace Dr. E. P. Coleman of Canton, Illinois. Other current members are Drs. John Flack Burton, Oklahoma City, Chairman; Albert J. Bowles, Seattle; I. Jay Brightman, Albany; Wesley W. Hall, Reno; Eugene A. Ockuly, Toledo; and Dean W. Roberts, Chicago. Committee consultants are Mr. R. M. Hilliard, Chicago, and Mr. Nelson B. Neff, Reno.

COMMITTEE MEETINGS

The Committee held two meetings in Chicago during the year, in November and April. At the November meeting, representatives of the Bureau of Public Assistance of the Department of Health, Education, and Welfare and of the American Public Welfare Association were guests of the Committee; at the April meeting, Dr. Solomon J. Axelrod, Professor of Public Health Economics of the University of Michigan, was a guest, to discuss studies of medical care for aged assistance recipients he is directing for the A. P. W. A.

COMMITTEE LIAISON

Through these meetings and consultation at the staff level, the Committee maintains an informal liaison with the Bureau of Public Assistance, the Federal agency most directly concerned with medical care for the indigent, and with the American Public Welfare Association, the professional organization most directly concerned with the actual administration of the various public aid programs. These contacts not only provide sources of factual data concerning indigent care problems, but also help acquaint the Committee members with administrators' views of assistance economics and the place of medical care in the total picture.

PROSPECTUS

At its April 1959 meeting, the Committee drew up a *Prospectus* for current and future activities, which is summarized below:

I. The Problem

Most states have established monetary aid programs for the needy, but current political claims of inadequate medical and hospital services for this group will probably continue. The effective answer to pressure for expanded Federal medical programs is *proof* that the needy can be and are taken care of without new Federal programs.

II. The Medical Profession's Responsibility

The average patients does not clearly distinguish between the various agencies and professional groups involved in the total health care picture, but considers the medical profession basically responsible for the whole complex. The medical profession, as a result, is placed in a position either of refusing responsibility for anything but physicians' own services or of accepting a certain degree of responsibility for all health services. The Committee believes that the profession should work *actively, formally,* and *publicly* to assure the adequate, high quality care for the needy demanded by A. M. A. policy statements.

III. Indigent Care Goals

Specific goals envisioned by the Committee include medical liaison with public and private welfare agencies at national, state and local levels; information centers listing medical and auxiliary resources available to the needy in the community; assurance to the public, through liaison with ancillary and auxiliary health services, that these services are available to the needy; medical initiative in explaining to the public the need for funds *essential* to medical care programs.

As recommended by the House in 1958, the medical profession should become familiar with methods used in determining eligibility and should participate in continuing reevaluation of these standards. Emphasis should be laid on the need for standards for those not on assistance rolls who require aid only to obtain medical care. Medical societies should work especially to implement the A. M. A. policy that the needy should be allowed to choose the source of their care from lists acceptable to the professions concerned, of participating physicians, dentists, and clinics, and that continuity of care should be encouraged.

IV. Committee on Indigent Care Activities

Specific Committee activities underway or projected include pilot studies in several states, collection and dissemination to state associations of data on assistance medical care plans, establishment and publicization of pilot projects in cooperation with state or county societies, and Committee and staff consultation with state and county societies as requested.

GENERAL PROBLEMS

Changing Medical Picture.—In the early part of the century the physician could usually, through his own charity, assure needy patients of the same care as that received by the fully self-supporting members of the community. Today, "adequate, quality care" means not only the physicians' services, but also such ancillary hospital and convalescent care, prescriptions, and therapy, as he decides are needed. Further, it is coming to be a matter of common opinion that proper medical and hospital care is every citizen's *right* rather than a privilege, and this opinion appears to be gaining ground in both the state and national legislatures.

On the other hand, while increased use of prepayment and insurance mechanisms have lightened the economic burden of medical and hospital care for many paying patients, they have at the same time made it more difficult for some hospitals to absorb the expense of charity care.

The medical profession must therefore accelerate steps to formulate and initiate effective health care programs for those in need, with proper medical advice and control. Delay may mean a forced retreat before gradually expanding programs of wholly governmental medicine.

Groups to be Aided.—Corollary to the change in the medical picture is the change in the population groups which need help in meeting medical care costs. In the past, two groups were primarily involved: the *indigent*, who needed help to meet ordinary daily living costs, and the *medically indigent*, who could meet other costs without assistance but needed help when medical expenses arose. The Committee feels that the latter term is no longer either adequate or accurate.

One portion of this category consists of persons whose income is barely above the indigent level, so that they require help whenever health problems arise. As proper medical care has come to be considered one of the necessities of daily life, these provisionally or "marginally indigent" persons could well be considered a part of the total indigent group, to be aided through the same programs as need arises.

For the other portion of the so-called "medically indigent" group, however, the need for assistance arises not from their low income level, but from the financially catastrophic expense involved in long-term treatment, intensive hospital care, or expensive medication. This concept, of course, has already achieved a place in the prepayment and insurance field, in "major medical" coverage.

Programs to aid in financing or providing health care for those in need should, accordingly, be aimed today not merely at the problems of *indigency*, but also of *catastrophic illness*. Official policy statements of the American Medical Association in regard to indigent care have, in the past, been directed primarily at *tax-supported* personal health service programs, the indigent having long been accepted as a community responsibility. The Committee feels that the profession must intensify its search for means of easing the burden of catastrophic illness, particularly for those who have been unable to obtain or afford prepayment or insurance coverage, or whose coverage is insufficient.

Adequacy of Present Programs.—In February 1959, over 6¼ million individuals were reported as on governmental assistance rolls; 5.3 million of these were in the two Federally-aided programs of Old Age Assistance and Aid to Dependent Children. Only the Old Age Assistance program has declined during the past year; this group has decreased in number yearly since 1950, as Old Age and Survivors' Insurance (OASI) coverage has increased. Expenditures for the Federally-aided Public Assistance and the state-local General Assistance programs during February were $308 million, of which $35.5 million was expended in vendor payments to physicians, hospitals, nursing homes, and other providers of medical services. No figures are available as to the amount paid the assistance recipients themselves to meet medical expenses.

However, adequate information as to the quality and quantity of medical care provided is still lacking. At the national level, in response to a request from the Subcommittee on Administration of the Social Security Laws of the House Ways and Means Committee, the A. M. A. Executive Vice President has called attention to the need for more complete and uniform state reports on medical care, and more adequate medical staffing for the Federal Bureau of Public Assistance, as well as the 1958 recommendation of the Council adopted by the House of Delegates that states be allowed to combine the medical programs for the four Public Assistance programs.

At the state and local level, there does not at present appear to be any source of comprehensive data on General Assistance medical care. Since no Federal funds are involved, state reports to Federal agencies are not necessarily complete and, in some states, this is solely a county or township responsibility, entailing no complete report to the state government agencies. A recent report for New Jersey estimates that over 500 public and private agencies provide indigent health services; this vast multiplicity of agencies, and the wide variety of methods in use in the different counties and townships, make it difficult to determine the amount and quality of care provided for those not on Public Assistance rolls.

COMMITTEE STUDIES

General Areas.—The Committee is maintaining a continual study of legislation affecting the administration of Public Assistance medical care. The only significant change in this field in the past year resulted from the Social Security Amendments of 1958, changing Federal matching formulae and returning to the states the prerogative of allocation of funds for medical care, described in the Council's supplementary report, December 1958.

The Committee has also given particular attention to the problems involved in aiding the "provisionally or marginally indigent" and those faced by catastrophic illness, and hopes to be able to report specific recommendations for the improvement of present programs or the development of new programs in these areas shortly.

In the area of obtaining more information concerning General Assistance medical care, the Committee notes that, in recent years, a number of states have initiated comprehensive studies of their resources for care of the needy, frequently with the cooperation or at the instance of the state medical association. Such studies have been carried on in Kentucky, Georgia, and Florida, and are currently being made in New Jersey and Louisiana, to name but a few. Medical associations participating in such activities are to be commended; the Committee and its staff stand ready to assist the state associations in a consultative capacity on request. It would also appreciate being informed of any state or county society studies undertaken; progress and final reports will be helpful to the Committee and to the other associations undertaking similar projects, since only at the local level can the community health programs be adequately appraised.

Specific Studies.—The Committee is currently engaged in four studies regarding existing programs, as well as its continuing search for new or improved solutions of these problems.

(1) **Quality and Adequacy of Care.**—Committee members began detailed studies of Public Assistance medical care in their own communities during June 1959. They are particularly interested in comparing these programs with the "Guides" adopted by the House in 1956, and especially in determining whether care provided meets "as high standards of quality and adequacy as can reasonably be made available to others in the community." Completed studies will be submitted for publication in The Journal of the A. M. A.

(2) **Medical Society Activity.**—In December 1958, the House adopted five recommendations urging specific state and county medical society activities in the indigent care field. The Committee is studying their effect in a number of states.

(3) **Prescription Costs.**—Reports for calendar year 1957 indicated that some 14% of vendor payments for Public Assistance medical care go for drugs and supplies. This is probably an underestimate of the total portion of assistance monies expended on prescriptions, since much of this cost is not met by vendor payment. Welfare departments are seriously concerned about this budget item, particularly since such costs are relatively unpredictable. The Committee is undertaking a joint study of this problem with the Medical

Care Committee of the American Public Welfare Association, with a view of evolving control mechanisms.

(4) Medical Causes of Dependency.—Disability, particularly prolonged illness, is a frequent cause for entrance on the assistance rolls. The Committee is therefore studying the reasons given for indigency, to determine the importance of illness as a causative factor, and recommend steps which the medical profession, welfare agencies, and others concerned might take to help prevent dependency.

COMMITTEE REPORTS

Indigent Care.—In the December 20, 1958, issue of THE JOURNAL of the A. M. A., the Committee published a detailed study of the changes resulting in the Public Assistance programs from the Social Security Amendments of 1958, entitled, "Medical Care for the Indigent in 1958." This report was subsequently reprinted and distributed to all state medical associations and, on request, to county societies and individuals.

Organized Home Care Programs.—In 1957 the Committee published a report covering the operation of 45 "Organized Home Care Programs in the United States." About 2,000 copies of this survey have been distributed to date. Information has since been collected on 12 additional programs, established since the original report was published, which will be included in a revised edition of the report now being prepared.

At present, some 59 home care programs are in operation in this country. Six of the 12 more recently established programs are operating in predominantly rural areas, all on a pilot study basis. There appears to be a growing trend toward experimentation in extending to rural areas both these programs and other home services, such as rehabilitation nursing, homemaker services, "meals on wheels", and the like.

The Chronic Disease Program of the U. S. Public Health Service is presently planning a survey of home care programs. Meetings are being held with this agency to exchange information and explore the possibility of a cooperative inventory and perhaps an evaluation of these programs.

RECOMMENDATIONS

There is a continually increasing acceptance, both by some governmental agencies and by segments of the general public, of the attitude that the citizen has a right to receive adequate, quality treatment of his illnesses and that it is the responsibility of the community to provide such care for the individual who cannot himself pay for it. In this context, the Council recommends again the continuous and active interest and participation of the medical profession in the whole problem of aid to the needy, including administration, eligibility, financing, and the range and quality of medical services provided.

It further *recommends study by state and county associations of the problems involved in financially catastrophic illness, with a view to evolving community programs to help finance needed treatment without requiring the normally self-supporting patient to go on public assistance rolls. This is and may remain an economic problem in medicine. Accelerated planning in this area is needed at all levels of medical organization.*

Committee on Insurance and Prepayment Plans

In the Supplementary Report of the Council at the 1958 Clinical Session it was stated that the nucleus of the new committee had been established. This was accomplished in September of 1958. Subsequently the authorized membership of nine was completed and the Committee members as reported in June 1959 remain the same. They are: Carlton E. Wertz, M.D., Chairman, Buffalo, New York; H. Russell Brown, M.D., Watertown, South Dakota; Gerald D. Dorman, M.D., New York, New York; Percy E. Hopkins, M.D., Chicago, Illinois; Quentin Kintner, M.D., Port Angeles, Washington; W. Vinson Pierce, M.D., Covington, Kentucky; T. Eric Reynolds, M.D., Oakland, California; Milford O. Rouse, M.D., Dallas, Texas; Donald Stubbs, M.D., Washington, D. C.

In addition, the Council authorized and approved a list of consultants to advise the Committee on different aspects of insurance. The consultants were identified in the progress taken along these lines by state and county medical societies, for its own information and for the information of other state and county societies.

Hometown Medical Care

In its 1957 supplementary report to the House of Delegates, the Council noted that the Committee on Federal Medical Services would "consider the possibility of sponsoring a national conference on veterans' medical care during 1958, during which time would be provided for a thorough discussion of the advantages and disadvantages of each of the three methods by their proponents." The reference committee, in a report adopted by the House, called particular attention to and endorsed the national conference proposal.

As the culmination of its two-year study of the three methods of administering Hometown Medical Care, the Committee devoted the first panel discussion at its December 1 Conference on Federal Medical Services to this subject. As a result of the study and the Conference, the Committee, at its February 7-8, 1959, meeting, *endorsed the intermediary type of program* as the most effective way of maintaining the continuity of care and the personal relationship between physician and veteran patient.

Reasons for Endorsement.—The intermediary method holds advantages both for patient and for physician. It fosters treatment of the veteran's service-connected ills by the same physician who treats his civilian ailments; it allows the veteran a wider range of choice of physician than do those agreements in which the Veterans' Administration negotiates directly with physicians. It is to the advantage of the physician to negotiate with a Federal agency through a medical society rather than directly. In fact, in many cases physicians have continued to participate in this program only because of the persuasions of medical society and intermediary personnel, thereby providing a wider choice of physician to the veteran.

However, at the time the Committee made its endorsement, it was informed that the Veterans' Administration proposed to curtail intermediary functions during the coming fiscal year to effectively eliminate much of its administrative activity. Under the proposed new contracts, the intermediary would become primarily a check-writing and professional relations agent for the Veterans' Administration, and would no longer even be informed as to the professional services for which payment was made.

Committee Actions.—The Committee's endorsement of the intermediary type of program was announced in the *A. M. A. News*, February 23, 1959, and in the Federal Medical Services *Newsletter 19*, February, 1959. The eight states (California, Colorado, Michigan, North Carolina, Oregon, South Dakota, Washington, Wisconsin) and Hawaii, which were operating under intermediary contracts, were immediately informed of the provisions of the proposed fiscal year 1960 contract and of the projected curtailments.

In the April 1959 Federal Medical Services *Newsletter 20*, the Committee published a detailed 4½-page report on the Hometown Care program, including a brief history and description of the program and a discussion of both the Veterans' Administration proposals and the Committee's position, urging the states without intermediary contracts to reevaluate their programs in the light of the Committee's findings.

On May 1, 1959, the Committee sponsored a meeting at Chicago between representatives of all state associations with intermediary contracts, and the V. A. Director of Clinics where another attempt was made to mediate the Veterans' Administration proposals.

As a result of this meeting, on May 6, 1959, Dr. Roth, as chairman of the Committee, wrote Mr. Sumner G. Whittier, Administrator of Veterans' Affairs, outlining the Committee's position and its reasons for opposing this change in intermediary contracts, and recommending:

"1. That renewal of the current intermediary contracts, without significant change, be permitted in those states which desire it, to provide an opportunity for thorough exploration of all aspects of this problem;

"2. That state medical associations with intermediary contracts be allowed to negotiate directly with the V. A. Central Office in Washington, D. C., in a manner similar to the negotiation made in reference to Medicare, instead of being forced to conduct preliminary negotiations with local or regional V. A. offices which have no final authority in respect to the contracts;

"3. That the Veterans' Administration consider seriously any requests from additional states which desire to negotiate intermediary contracts, in lieu of present non-intermediary arrangements."

The Committee regrets to report that its protests and those of the individual state medical associations concerned appear to have had little effect on the determination of the Veterans' Administration to remove all administrative responsibility from the hands of the intermediaries. Any further developments, however, will be brought to the House's attention in a supplementary report of the Council.

Recommendations.—The Council does not, by the endorsement of the intermediary system, imply any defect in the quality of care given by individual private physicians in states without such agreements. It recognizes that some associations strongly oppose any formal agreement with a Federal agency and that others feel that the program is too small in their states to render the use of an intermediary economically feasible. Yet it is of the opinion that some degree of medical responsibility for the administration of this program is essential to protect the best interests both of the patient and the physician.

It is therefore recommended *that the House of Delegates urge all state medical associations in states where Hometown Care is not provided under an intermediary contract to reevaluate their programs, taking into consideration the encouragement to continuity of care and freedom of choice through wider physician participation provided by the intermediary system.*

It is further recommended *that the House of Delegates support those state associations which at present have intermediary contracts in their opposition to curtailment of the medical profession's responsibility in the administration of these programs, which could well lead to limitations on the patients' choice of physician and consequent deterioration of the quality of care and patient acceptability of care.*

The Council wishes to call attention to a suggestion mentioned by several participants in the December 1 Conference, to the effect that the Hometown Care principle might well be extended to hospital care as well. Hometown Care, at present, provides only for outpatient treatment of service-connected disabilities, and then only when the Veterans Administration decides there is good reason to allow the veteran to be treated in his own community rather than at V. A. outpatient departments and clinics. The V. A. also hospitalizes some 3,000 of its approximately 115,000 daily patient load in non-V. A. hospitals, but again, the decision is the Veterans' Administration's, not the patient's.

The Council believes that there is a serious confusion of principle involved here. If care for *service-connected disabilities* at the expense of the nation is an earned right of the veteran, rather than a privilege—and the medical profession concurs with the Congress that it is a right—then the Council believes that the veteran with a *service-connected disability* has a *right to choose where and by whom he should be treated.* The Council therefore recommends *that veterans requiring office, home, hospital, nursing home or convalescent care for any service-connected disability should have the right to* choose between (1) *care by a private physician in a private facility at Federal expense,* or (2) *treatment in Veterans' Administration facilities, rather than that this decision should be, as at present, the prerogative of Veterans' Administration officials.*

Medical Education and Research

In June 1958, the House of Delegates adopted Resolution No. 30, recommending a suggestion to the Deans' Committees "that they restrict their activities to Veterans' Administration hospitals admitting only patients with service-connected disabilities." As the Committee noted in its supplementary report for 1958, full implementation of this resolution would imply elimination of the Deans' Committee residency and internship programs under present admission policies.

The Committee suggested that the full potential of V. A. competition with non-federal medical facilities' teaching programs should be explored, and made V. A. education and research programs one of the topics for discussion at the December 1 conference. The reference committee called particular attention to this competition, and stated "We believe this problem deserves further study by the Council on Medical Education and Hospitals and Council on Medical Service."

The Committee wishes to report, first, on the actual recommendations contained in Resolution 30, regarding restriction of Deans' Committee activities. It is appropriate here to quote from the remarks of Dr. Granville Bennett, chairman of the Committee on V. A. Medical School Relationships of the Association of American Medical Colleges, as given in the *Proceedings* of the December 1 conference (pp. 18-21).

Dr. Bennett quoted a report of his Committee from the 1954 A. A. M. C. meeting, which had never to his knowledge been superseded: "The policy of the A. A. M. C. remains unchanged in this regard; the Association's interest and responsibility are research and education. It is not the responsibility of the A. A. M. C. to determine eligibility for admission of patients to V. A. hospitals. While most citizens, including the members of the Association, do not sanction free medical and hospital service for non-service-connected cases when these veterans are able to pay, we believe it is not the prerogative of the Association to attempt to enforce measures to prevent the admission of such patients. . . . If . . . patients in V. A. hospitals were limited to service-connected veterans, the clinical cases available for education and research would be so limited in variety as to threaten seriously a residency training program. . . . If affiliation with medical schools should be terminated, this in turn would threaten the quality of care given to veteran patients because of the almost certain reduction in number and quality of staffs in V. A. hospitals."

In addition to quoting this report, Dr. Bennett also noted his belief that "Some medical schools have developed a vital need for Veterans' Administration hospitals since they have become an integral part of their undergraduate and postgraduate educational system."

It is apparent from this statement that the official representatives of the nation's medical schools are not in sympathy with the suggestion made in Resolution 30.

The Council therefore *recommends, in view of the practical difficulties of implementing this resolution, that the House consider the possibility of rescinding this recommendation.*

In view of the comparatively small size of the service-connected patient load and the difference in type between service-connected illnesses, now predominantly chronic in nature, and non-service-connected illnesses, predominantly acute, the Committee considers it open to question whether curtailment of the residency programs would seriously affect the quality of service-connected care. Dr. Allan, of the Council on Medical Education and Hospitals, speaking at the December 1 conference, stated, in fact, that if V. A. hospitals were used predominantly for chronic care and research, "such investigation programs should attract good men to V. A. hospitals and, in this respect, will improve veterans' care."

In regard to the reference committee's recommendation for further study of competition between V. A. and non-federal teaching programs, the Councils on Medical Service and on Medical Education and Hospitals have appointed representatives to a liaison committee to discuss this and other areas in which their responsibilities overlap. The first meeting of this committee was held February 6, 1959, at which time Resolution 30 was discussed. The following statement was submitted to the Council on Medical Service by C. M. E. H. representatives as that Council's position in reference to approval of residencies in V. A. hospitals:

> "The basic responsibility of the Council on Medical Education and Hospitals is to act on behalf of the American Medical Association in developing and maintaining the highest possible standards of medical education. Programs at all levels of medical education—medical school, internship, and residency—are evaluated solely on the basis of their educational worth to the students concerned. Decisions concerning the programs are not compromised by other considerations.
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> "The Council's approval of a program signifies only that the Council believes that the program offers a sound education for the purposes which the program is designed to fulfill. Council approval of a program should not and cannot be interpreted to indicate attitudes or opinions of the Council, its individual members, or the Association of which it is a part in favor of or opposed to social, economic, political or other beliefs of the organization or institution sponsoring the program."—Statement prepared by representatives of C. M. E. H. subsequent to Liaison Committee meeting with Council on Medical Service representatives February 7, 1959.

The Council on Medical Education and Hospitals is gathering certain data on V. A. educational programs for study by the liaison group; when this material is collected, the Committee on Federal Medical Services will report further to the House concerning the scope and importance of these programs and their effect on non-federal teaching programs.

RAILROAD RETIREMENT BOARD

Early in 1959, the Committee on Federal Medical Services was requested by one of the state medical associations to investigate a complaint that the Railroad Retirement Board was paying the Veterans' Administration to conduct some of its disability rating examinations. Through personal contact with staff members of the Board and through correspondence, the Committee found that V. A. hospitals were in fact being utilized for a limited number of examinations, but that the Board would prefer to have this work done by private physicians.

Railroad employees can obtain occupational disability, determined in accordance with specific job standards, or permanent and total disability compensation. In some seventy per cent of the cases, the examinations are conducted by railway physicians, at the expense of the railroad which employs the worker. The remaining thirty per cent are examined at Board expense, and comprise mainly cases where the employer and employee disagree as to whether the employee is disabled.

Of the thiry per cent, about two-thirds are at present examined by private physicians, on the Board's list of 7,000 to 8,000 participating physicians who have agreed to accept these cases. The remaining one-third of the examinations of disputed claims are conducted by physicians in federal and state facilities, for one or more of the following reasons:

(1) The claimant is an inpatient in the facility concerned at the time of examination;
(2) The examination requires a series of tests and involves either hospitalization or consultation among a number of specialists, or both;
(3) The private physician's initial examination has failed to provide sufficient information to meet the Board's needs.

In regard to this third category, it should be noted that, since almost all claims examined at Board expense are disputed, its adjudication must be based on data sufficient to support its decision in any subsequent court hearings. Apparently a number of the examination reports received from private physicians have been incomplete or superficial, requiring reexamination of the claimant.

This year, the Board has revised its examination forms, with a view to obtaining specific answers to a number of "yes-or-no" questions. By thus more fully detailing the exact information it wants, it hopes to obtain satisfactory examination reports in a greater proportion of the cases.

Board officials expressed the hope that they would be able to make greater use of private physicians to conduct these examinations from the strictly practical point of view that in-hospital examinations delay their proceedings two to three weeks.

Committee Action.—The Committee took two steps to facilitate this utilization of private physicians, advising the Board to establish closer liaison with the individual state medical associations in order to obtain improved cooperation from private physicians, and informing the individual associations of the background of this problem and the Board's plans. It is continuing to maintain an informal liaison with the Board, so as to encourage in every way possible this laudable effort to reduce the use of the Federal hospital system for what is properly a matter for private medicine.

It is probably true, as Board officials believe, that the small size of this program may have been one cause, in the past, for inadequate reporting. The total claims expected during 1959 were about 15,000, of which about 5,000 would be examined at Board expense for a total cost of approximately $40,000. Spread over a twelve-month period and a participating list of seven or eight thousand physicians, this is obviously a very minor part of any physician's practice.

The Council on Medical Service believes, nevertheless, that this problem has an importance perhaps out of proportion to its size, in that effective participation by private physicians can arrest, on at least one front, the trend towards using Federal facilities for examinations which lie properly in the province of the private physician.

It therefore *recommends that the state medical associations and the individual physicians concerned offer every reasonable cooperation to this agency in its attempt to obtain from private physicians disability examinations adequate to its needs.*

MEDICARE

As explained in detail in the Council's 1958 supplementary report, the restrictions placed on the Medicare program in October 1958 required dependents living with a serviceman to obtain a permit to receive civilian treatment at government expense and stipulated that certain non-emergency and out-patient services from civilian physicians and facilities would not be eligible for payment. At the December 1958 session of the House of Delegates, the House adopted a reference committee report urging "the re-establishment of services under the free choice principle, to accomplish the original intent of the Act."

From discussion at the December 1, 1958 Conference on Federal Medical Services, the Committee concludes that the permits referred to above are designed not merely to reduce program cost by optimum utilization of military facilities, but also to maintain a sufficient patient load for educational purposes and to provide for rapid expansion of military medical facilities in local or national emergencies. Regardless of the strength of arguments for military residency and internship programs, the Committee feels that the claimed need to keep military facilities to optimum strength for rapid expansion will probably counteract any attempt to revoke the permit system in the near future.

However, the second restriction on freedom of choice may be ameliorated, since program officials are reported to be studying ways of restoring some out-patient service and plannable surgery by civilian physicians, within program budget limits. No definite decision has, as yet, been reached.

The Committee has established direct liaison with the Office of Dependents' Medical Care, and members have met with ODMC staff several times during 1959. The Committee feels this liaison can be useful to the profession in clarifying administrative problems and improving the program, particularly if state associations will report to the Committee any problems which do not appear susceptible of solution at the state level.

NEGOTIATIONS WITH FEDERAL AGENCIES

In this connection, the Council feels it appropriate to point out that an increasing number of Federal agencies are entering into negotiations with state medical associations in regard to payment for private medical care. Since these agreements are negotiated by different Federal agencies, and frequently with different committees within the associations, two Federal programs may have different fees for the same procedure in the same state.

This has been mentioned a number of times in Congress during the past year, particularly in regard to the disparity of fees between Medicare and the V. A. Hometown Care program; Medicare fees, it was brought out at appropriation hearings, were higher than V. A. fees in a number of areas.

As a result, several legislators have suggested that all such agreements be negotiated for all Federal programs by a single agency of the government. While no bills have been introduced in this session of Congress to implement this suggestion, continued utilization of the services of private physicians by the Veterans' Administration, the Railroad Retirement Board, Medicare, the Division of Indian Health of the Public Health Service makes it likely that this suggestion will continue to be explored.

While the American Medical Association has, in the past, agreed that Federal medical programs should be coordinated to avoid duplication and overlapping of functions and facilities, the Council considers the value of a single "purchasing agent" for civilian medical services questionable; such an attempt to standardize fees might well lead to more problems than it would solve.

The Council will continue to explore the possibilities of this proposal. In the meantime, it suggests *that each state medical association which has not already done so consolidate under one committee all responsibility for negotiating with governmental agencies for the private care of patients for whom the government assumes responsibility*. Such a mechanism, the Council believes, would not only help to avoid criticism based on widely divergent fees for similar services to different groups of Federal patients, but would also strengthen the association's position by providing a uniformity of approach to all governmental programs.

INDIAN HEALTH SERVICES

The Council is pleased to report significant improvements in the health of the American Indian population. According to the most recent reports, during the time this portion of the population has been under the care of the Division of Indian Health of the Public Health Service, beginning with 1955, the tuberculosis death rate has dropped some 40 per cent, the infant death rate has dropped 12 per cent, and the death rate from gastro-enteric diseases was reduced by 26 per cent.

The disease picture for the Indian is still worse than that for the total United States population. In 1957, for example, the tuberculosis death rate for Indians, excluding Alaskan natives, was 29.8 per 100,000, about four times as high as the 7.5 per 100,000 rate for all the population; the incidence of TB per 100,000 persons was 426.9 for Indians, against 51.4 for the whole population. Infant death rates for Indians were about double those for all races—57.0 deaths per 1,000 live births against 26.3.

The mortality by age groups in 1957 also indicates much progress to be made in Indian health: 23% of Indian deaths occur during the first year of life, and 34% under the age of 20, compared to 7% of deaths for all races in the first year, and 10% under 20. Of the total population, 57% are at least 65 when they die; only 27% of the Indian deaths are past this age.

However, the Division of Indian Health is continuing to make progress in bringing Indian health to the level of the general population. Hospital births and outpatient visits have increased appreciably, the number of physicians and dental staff members has been nearly doubled and public health nurses have increased nearly one-third. Indians are being trained in the various ancillary services, to assist in improving their people's health. Twelve of the Indian hospitals out of a total of 54 are now accredited, 5 since the transfer to the Public Health Service, and the new 75-bed hospital at Shiprock is expected to be completed by the end of 1959.

Much remains to be done, but particular mention should be made of the steps taken to integrate Indian care with that of the general community, which may well be one of the most decisive measures taken to improve Indian health. In addition to the increase in funds expended for care in private facilities or provided by private practitioners from $5 million in 1955 to $8 million in 1958, the Public Health Service is participating in the cost of construction of 7 community hospitals, located in the vicinity of Indian tribal areas, which will be used for the care both of Indians and non-Indian residents of the community. Public Health Service participation is based on the expected amount of use by Indian patients.

The Public Health Service is to be commended for this continuing effort to initiate its Indian patients into the private system of medical care. This cooperation between governmental and private medical personnel and facilities is undoubtedly the most effective method of improving the health of the Indian population.

COMMITTEE PUBLICATIONS

In the period from July 1958 to June 1959, four issues of the Federal Medical Services *Newsletter* were published. Among the major items reported were the complete text of Dr. Roth's testimony before the House Committee on Veterans' Affairs in regard to the A. M. A. policy on veterans' medical care, a synopsis of the discussion at the December 1 conference, an analysis of the President's policy statement on veterans' hospitalization released February 26, 1959, a detailed report on Hometown Care, and the text of Dr. Roth's letter to Mr. Whittier on Hometown Care.

Prior to 1959, this Newsletter was sent not only to members of state association veterans' affairs committees and others who had requested it, but also to those on the mailing list for the *Secretary's Letter* of the A. M. A. With the commencement of publication of the A. M. A. *News*, the *Secretary's Letter* was discontinued; those on this list were therefore requested in the October-November issue of the *Newsletter* to inform the Committee if they wished to continue receiving it. In view of the fact that no return card or application blank was enclosed with this announcement, the Committee considers it gratifying that over a hundred individuals, not members of veterans' affairs committees, wrote requesting that their names be continued on the list.

Early in 1957, the Committee published a factbook concerning "AMA Policy on Medical Care of Veterans", presenting, in question-and-answer form, the Association's policy, the reasons for this policy, and relevant statistical material about the V. A. hospital system. In reviewing this factbook, the Committee concluded that "there has been no change, and no reason for change" in the medical profession's policy and that, therefore, the question-and-answer portion of the factbook was still correct. However, to bring the statistical data up to date, the Committee published an addendum, designed to fit inside the original factbook, bringing the material on hospital utilization, costs, and analysis of the veteran population in line with the latest information available as of June 30, 1958. This *Addendum* has been sent to all those on the *Newsletter* mailing list, and has been included with all copies of the factbook sent out during the July 1958-June 1959 period.

As announced in its supplementary report to the House of Delegates in December 1958, the Committee also designed three brief leaflets on veterans' medical care for general distribution. "What About the Veteran's Family?" compares the care provided for veterans and for their wives, children, and friends; "The Cost of Free Veterans' Care" discusses the cost to the veteran of his supposedly free treatment; and "How to Cut Your Medical Bill" compares the cost of care in V. A. and non-Federal facilities.

The first release of these leaflets was to the participants in the December 1 Conference on Federal Medical Services; copies were also made available to the members of the House of Delegates at the Minneapolis meeting. Following this initial release, single copies of the three leaflets were sent to those on the *Newsletter* mailing list and to state association secretaries.

After these introductory mailings, copies of the leaflets were sent out only on request. It is therefore strong evidence of the interest shown in this subject that the first printing was used up within three months and that, during the seven months since the leaflets were introduced, well over 30 thousand of each have been distributed.

The Committee feels that continued distribution of these leaflets will do much to bring about a climate of public interest and understanding of the medical profession's policies regarding veterans' medical care. It is exploring the possibility of additional public information material on this problem.

Committee on Aging

This Committee has had three membership changes during the year: Doctor Wingate M. Johnson, Winston-Salem, North Carolina was replaced by Doctor Edward H. Williams, Miami, Florida; Doctor Hoyt B. Woolley, Idaho Falls, Idaho, was named as the Council representative; Doctor J. Lafe Ludwig, Chairman of the Council on Medical Service, became an ex officio member. Other members are: Drs. Frederick C. Swartz, Chairman, Lansing, Michigan; David B. Allman, Atlantic City, New Jersey; Henry A. Holle, Staten Island, New York; Theodore G. Klumpp, New York City; Henry B. Mulholland, Charlottesville, Virginia; and Cecil Wittson, Omaha, Nebraska. Doctor Edward L. Bortz, Philadelphia, Pennsylvania, has resigned his active status with the Committee, but continues as a consultant. Doctor Gunnar Gundersen, LaCrosse, Wisconsin, was invited to become a member of the Committee, June, 1959, and has accepted.

MEETINGS

The Committee has held five regular and two special meetings. Regular Committee meetings were held in Chicago, September 12-14 (concurrently with the Planning Conference on Medical Society Action in Aging), in Minneapolis, December 4-5; in Washington, D. C., January 25; in Salt Lake City, May 9, and in Washington, D. C., June 16. Two special meetings were held: one in Minneapolis, December 5, with the Committee on Medical and Related Facilities to discuss "Guides for Medical Care in Nursing Homes and Related Facilities" (cf. Committee on Medical and Related Facilities—this report); and the other in Washington, D. C., January 24, with representatives of various Federal departments and national organizations demonstrating special interest in aging, and representatives of state committees on aging, to exchange information on current programs and projects.

TRENDS IN ACTIVITIES ON AGING

It is evident that, for a variety of motives, increasing attention is being given to the older population and to aging. This observation is applicable not only to government, but also to non-governmental activities.

Congress has shown its interest in a variety of ways. The number of bills introduced with special provisions for older persons has grown rapidly in recent years and may be expected to continue to rise. Passage of the Fogarty bill, calling for a White House Conference in 1961, and appropriations of funds to the states for pre-conference activities, is the major action to date. Twice in the past two years the House of Representatives' Ways and Means Committee has held public hearings on the Forand bill, a proposal which provides that restricted compulsory health insurance be created for all Old Age and Survivors Insurance Beneficiaries under Social Security. The Senate Labor and Public Welfare Committee has created a sub-committee on Problems of the Aged and Aging under the chairmanship of Senator Patrick V. McNamara. This subcommittee plans extensive hearings both in Washington and in other major cities throughout the nation. The chairman of the A. M. A. Committee on Aging participated in the initial hearings of this subcommittee held in Washington, June 16-18.

Every executive department of the federal government is engaged in activities carrying special implications for the older person. The Department of Health, Education, and Welfare is deeply involved. Of special importance is its Special Staff on Aging; this staff collects information on activities in the field of aging and disseminates this information in a monthly publication, "AGING"; its other functions include direction of staff details for the White House Conference on Aging.

State governments are directing increased attention to aging. Thirty-nine states now have official commissions, councils, or committees on aging, either through executive or legislative action. This growth has been partly stimulated by the coming White House Conference, but over 30 states had such special agencies prior to passage of the authorizing act.

Numerous national organizations, with widely varied interests, have entered or are entering the field of aging with new emphasis. Typical of these are the American Hospital Association, National Social Welfare Assembly, the American Public Health and Welfare Association, National Health Council, many national church organizations, federated women's groups, the American Nursing Home Association, National Committee on Homemaker Service, and the Council on State Governments.

At the local level, an increasing number of community councils on aging are being created and special projects, both study and action, are being undertaken.

Because health receives so much emphasis in all of these activities, it is imperative that the medical profession provide its special knowledge to such programs and vigorously make its leadership felt at national, state, and local levels. This it is doing.

It is perhaps significant, and hopefully so, that non-medical groups active in the field of aging are turning to medical society committees for guidance. No group, professonal or non-professional, has surpassed medicine in its interest and activities in meeting the needs for individual citizens created by reason of age.

The American Medical Association's program on behalf of older persons has been repeatedly pointed to by non-medical specialists in the field of aging as a "model". This reputation has been achieved only because of outstanding leadership in the state and county medical societies. If it is to be maintained, such leadership must continue to grow.

COMMITTEES ON AGING—STATE MEDICAL ASSOCIATIONS

In the last annual report, 33 state medical associations were reported as having committees on aging. Now, 48 state medical associations have actively functioning committees. Close liaison is being maintained with these state committees in pre-conference activities for the 1961 White House Conference on Aging (cf. White House Conference, this report), in reference to plans by the Senate Subcommittee on Aging for hearings in selected cities, in planning for the A. M. A. regional conferences on aging, and in state programs being undertaken. Several of the state associations have held or planned conferences for county medical society action similar to the A. M. A. conference of September, 1958.

REGIONAL CONFERENCE ON AGING

As a result of the 1958 A. M. A. Planning Conference on Medical Society Action in the Field of Aging and to supplement the series of regional meetings for medical society representatives, a new series of nine Regional Conferences on Aging has been undertaken. These Conferences are being directed toward lay groups interested in aging. The first of these Conferences, held in Salt Lake City, May 8-9, was co-sponsored by the A. M. A. and the state medical societies of Arizona, Wyoming, Utah, New Mexico, Montana, Idaho, Nevada, and Colorado. This Conference was attended by approximately 300 people representing more than 40 local and national organizations. Participants included representation from agriculture, industry, labor, churches, schools, government, women's groups, service clubs, retired persons' organizations, communications media, and civic planning groups. Emphasis throughout the program was given to the social, economic, and vocational factors which contribute to good health and meaningful living among the aging and to exploring ways in which opportunities for health and full living could be expanded by individuals, groups, and the community. Individual speakers, panels, and symposia discussed such topics as the problems of employment and compulsory retirement; financing of health care; "group responsibility;" the coming 1961 White House Conference on Aging; new trends in health care such as home care programs, homemaker services, "progressive care" experiments, and rehabilitation in nursing homes; and the importance of individual preparation for later years. Conference proceedings of the Salt Lake City meeting have been reproduced in limited quantity.

The second in this series of regional conferences will be held in Boston, on September 16-17, in cooperation with the state medical associations of Connecticut, Maine, Vermont, New Hampshire, Rhode Island, New York and Massachusetts. Seven similar meetings will be held in the subsequent six months. In 1959, meetings will be held in Minneapolis, October 14-15, for the states of Iowa, Wisconsin, North Dakota, South Dakota, and Minnesota; in Cleveland, October 28-29, for the states of Ohio, Michigan, Indiana, Pennsylvania, and Kentucky; and in Kansas City, November 16-17, for the states of Missouri, Kansas, Oklahoma, Illinois, and Nebraska. After the first of the year, meetings will be held in New Orleans, San Francisco, Atlanta, and Baltimore which will include all of the remaining states. While these conferences will be patterned after the one in Salt Lake City, the program format of each will be oriented to the particular region.

HEALTH APPRAISAL FORM

The Periodic Health Appraisal Form, described in the Report of the Council's 1958 Clinical Session, has been distributed to chairmen of state committees on aging with a letter which explains the Committee's philosophy and reasons for developing this form, and requesting comments and suggestions. This form is designed to elicit not only a medical history and a picture of present physical condition, but also information on the patient's daily living habits from the standpoint of nutrition, occupation, exercise and rest, and socio-psychological environment. The form is not offered as a rigid recommendation, but is an effort to encourage some degree of uniformity among health appraisals. It is hoped that it will stimulate increased physician participation in a program of periodic health appraisals as an essential part of health maintenance programs for their patients.

SCIENTIFIC PROGRAM

A special one day session on *New Concepts on Aging* was held during the Annual Session in Atlantic City, June 8-12. This session, attended by over 200 people, was designed to present the practicing physician with a concentrated view report submitted to the House at the 1959 Annual Session. Also that report indicated that the consultants had agreed to serve.

MEETINGS

During the period between the Committee organization and June 30, 1959, the Committee held four scheduled meetings. Two were held in connection with the Regional Conferences which the Committee sponsored. These Regional Conferences were reported to the House last June. Also, during the period covered by this report, the Committee held two informal meetings in connection with the 1958 Clinical and 1959 Annual Sessions of the House. In addition to these formal and informal meetings the Committee has met with the Medical Relations Committee of the Health Insurance Council and with representatives of Casualty Claims Officials.

The Committee has not limited its activities to its own scheduled meetings but has assisted in as well as been represented at other meetings which have dealt with topics within the scope of its broad interests. For example, the 10th Councillor District (Pennsylvania) desired to confer with representatives of 23 county medical societies in 12 different states in which counties 10,000 or more steelworkers were employed. Such a meeting was held in Pittsburgh on June 24 and was attended by representatives of these county societies as well as by representatives of Blue Shield, Blue Cross, The Hospital Council of Western Pennsylvania, the Health Insurance Council and the United Steelworkers. The Committee and Council were represented at that conference and the staff assisted in the general arrangements.

A further activity which is being considered is a joint meeting with the new Medical Disciplinary Committee created by the Board of Trustees. It is believed that this will result in each Committee complementing the activities of the other and at the same time will minimize any unnecessary duplication of effort.

VOLUNTARY HEALTH INSURANCE

Total enrollment under health insurance increased during 1958 in spite of the "recession" which was evidenced in several parts of the country. With respect to surgical expense benefits, the growth during 1958 for medical society plans, including Blue Shield as well as Blue Cross coordinated programs amounted to a net increase of 1,328,745 subscribers. When considering all types of insuring organizations, net increases were reflected in enrollment figures for Blue Shield and insurance companies with a slight decrease in the number enrolled by the independent plans. The net enrollment growth under all categories of plans for surgical expense benefits was approximately 3,504,000.

Comparative total enrollment as of December 31, 1958 and the corresponding total for the preceding year end by category of benefit was as follows: hospitalization—123,038,000 over 121,432,000; surgical expense—111,435,000 against 103,931,000 and medical expense 75,395,000 contrasted with 71,813,000.

The greatest enrollment growth both from the standpoint of percentage gain and numbers of persons involved was recorded for major hospital and medical expense benefits or "catastrophe" coverage. The number so insured at the end of 1958 was 17,375,000 compared with 13,262,000 or a net increase of 4,113,000. This category of benefit is written largely by insurance carriers although several Blue Shield and some Blue Cross plans make this type coverage available and others are considering it.

Table I which follows portrays the substance of the statistical summaries contained in the 13th Annual Survey of the Health Insurance Council. It reflects the gross and net figures not only by category of coverage but by type of insuring organization.

As might be expected, the numerical and percentage increases are less dramatic than in previous years. This is due to the fact that the majority of persons who are eligible for insurance on a group basis has largely been enrolled and the growth in the future will be among those who are either self-employed or employed by concerns having relatively few employees.

The effectiveness of health insurance in assisting in paying for health care is increasing. This means that the scope of benefits as well as amounts of benefit allowances, in the aggregate, are increasing more rapidly than the number of persons insured.

Table I—*Distribution of Hospital, Surgical and Regular Medical Expense Coverage by Type of Insuring Organization, December 31, 1958.*

Type of Insuring Organization	Number of People Protected: Hospital Expense (000 Omitted)	Surgical Expense	Regular Medical Expense
INSURANCE COMPANIES:			
Group Insurance	49,508	49,917	29,868
Individual-Policy Insurance	29,372	25,819	7,869
Unadjusted Total	78,880	75,736	37,737
Deduction for Duplication* in Persons with Insurance-Company Protection	7,032	6,611	2,595
Net Total for Insurance Companies	71,798	69,125	35,142
BLUE CROSS, BLUE SHIELD† AND MEDICAL SOCIETY PLANS:	55,205	46,424	38,860
INDEPENDENT PLANS:			
Industrial Plans	3,065	3,017	2,863
Community Plans	628	1,259	1,243
[illegible]	153	227	192
[illegible]	619	769	817
[illegible]	400	300	900
Total for Independent Plans	4,865	5,572	6,015
Deduction for Duplication: Persons Protected by More Than One Type of Insuring Organization‡	8,830	9,686	4,622
NET TOTAL, PERSONS PROTECTED	123,038	111,435	75,395

* Number indicates those who may carry insurance with more than one company.

† Includes some plans which may not be medical-society approved; hence the variance between the HIC figure and the AMA figure as shown previously.

‡ Estimated number of persons who carry both insurance company and Blue Shield-Blue Cross or similar contracts.

Table II indicates the amounts paid toward various types of health care expenses by category of insurer during the calendar year 1958.

The Committee contributed to the Annual Survey of the Health Insurance Council as did Blue Shield Medical Care Plans, the Blue Cross Commission and other sources in developing the total data. The figures in Table II also were extracted from the Health Insurance Council survey.

COVERAGE FOR THE AGED

At the June meeting the Council submitted a Progress Report on Coverage for the Aged. It merely summarized some of the specific activities of medical associations, Blue Shield and Blue Cross Plans as well as insurance companies and associations which were deemed to be in keeping with the intent of Supplementary H of the Council which was adopted by the House during the Minneapolis meeting. The June, 1959, Progress Report mentioned further that the Council had approved a recommendation of the Committee on Insurance and Prepayment Plans to extend the principle of Supplementary H irrespective of insurance and if insurance is involved, it should be without regard to type.

Table II—*Voluntary Health Insurance Benefits Paid*

Type of Benefit	Type of Insuring Organization: Blue Shield Blue Cross	Insurance Companies	Independent	Total
HOSPITAL EXPENSE	$1,303,000,000	$1,186,000,000	$100,000,000	$2,589,000,000
SURGICAL AND MEDICAL EXPENSE	531,000,000	623,000,000	140,000,000	1,294,000,000
TOTAL	$1,834,000,000	$1,809,000,000	$240,000,000	$3,883,000,000

An up-to-date resume of activities of constituent associations, component societies, local plans and other insuring organizations in following through on the action of the House will be submitted in a Supplementary Report to the House at the Clinical Session.

SIMPLIFIED CLAIM FORMS

There is continuing interest in the subject of simplified claim forms for reporting medical information to insurance companies and plans. Claim forms of varying format and length have been a source of annoyance to practitioners. The six simplified claim forms developed by a special committee of the Health Insurance Council and approved by the Council on Medical Service have received wide distribution. In an effort to make this program known to all interested parties the Health Insurance Council prepared a special brochure captioned, "A Report to the Physician," which explains the use of each of these forms. In addition to the mass distribution of these pamphlets undertaken by the Health Insurance Council the office of the Council on Medical Service has mailed out an impressive number in reponse to individual requests from physicians.

It is also considered to be of interest to the profession that efforts are continuing to further simplify these reporting forms in order to reduce the time required to provide information essential to claims administration.

"LET'S USE, NOT ABUSE" AND "SUGGESTED GUIDES" FOR MEDICAL SOCIETY-SPONSORED VOLUNTARY PREPAYMENT MEDICAL BENEFIT PLANS

In closing this portion of the report, the Council and its Committee on Insurance and Prepayment Plans would like to recall to the attention of the House two statements it adopted during the 1958 Clinical Session in Minneapolis. Further, it is the opinion of the Council and Committee that the importance of the statement, "Let's Use, Not Abuse," and the suggested guides should be emphasized repeatedly to the medical profession and others who share the responsibility for the success of health insurance programs and prepayment plans.

The statement, "Let's Use, Not Abuse," was developed with an awareness of the frequent and constant increases in hospital charges plus acknowledgment of the respective responsibilities of individual physicians, the policy holders or subscribers, the insurance companies and prepayment plans and the hospitals. In group coverages underwritten through employers or unions, both unions and management also have appropriate responsibilities.

Although the statement "Let's Use, Not Abuse" has received rather wide distribution among the profession, including publication in the A. M. A. News, it is felt there should be repeated emphasis of the basic tenets if health insurance and prepayment mechanisms are to fulfill their potentials in assisting to finance health care. Accordingly, it is planned to reprint this statement in leaflet form in order to accomplish the widest possible distribution.

Finally, much of the same can be said regarding the "Suggested Guides" since in a number of instances medical society approved plans set the competitive pattern of benefits in their respective areas and thereby influence, to a degree, benefits offered by other organizations.

Committee on Maternal and Child Care

The members of this Committee are: Drs. Philip S. Barba, Chairman, Philadelphia, Pennsylvania; R. B. Chrisman, Jr., Coral Gables, Florida; W. L. Crawford, Rockford, Illinois; James F. Donnelly, Winston-Salem, North Carolina; Harold S. Morgan, Lincoln, Nebraska; Garland D. Murphy, El Dorado, Arkansas; Howard A. Nelson, Greenwood, Mississippi. Committee consultants are: Drs. Donald A. Dukelow, Chicago, Illinois, and Philip F. Williams, Philadelphia, Pennsylvania, and Mr. Edwin J. Holman, Chicago, Illinois. Two changes occurred in the Committee membership this year: Doctor Barba became the new chairman and Doctor Donnelly was the newly appointed member of the Committee replacing Doctor Reichert.

MEETINGS

The Committee held three meetings during the year. The first meeting, July 26-27, was devoted primarily to *"Perinatal Mortality and Morbidity Study Programs"*. The following groups were represented at this meeting: The American Academy of General Practice; The American Academy of Pediatrics; The American Association for Maternal and Infant Health; The American College of Obstetricians and Gynecologists; The American Hospital Association; The American Public Health Association; The American Society of Anesthesiologists; The Association of State Maternal and Child Health and Crippled Children Directors; The Children's Bureau; The College of American Pathologists; The Human Embryology and Development Study Section of the National Institute of Health, and the National Institute of Neurological Diseases and Blindness. These groups were called in to discuss and try to arrive at an agreement on specific terminology, definitions, and procedures that could be used as a basis for program planning on the part of various sized states, cities, and hospitals in their organized effort to reduce perinatal mortality and morbidity. The agreements reached at this Joint Conference, in addition to the majority opinions obtained at the two previous regional conferences (referred to in last year's annual report), were the basis for many of the recommendations that were subsequently included in the "Guide for the Study of Perinatal Mortality and Morbidity".

The November 8, 9, and 10 meeting was held in Washington, D. C. in order that liaison could be more firmly established with and consultation obtained from the government agencies concerned with the problems on which the Committee was working. The first draft of the "Guide for the Study of Perinatal Mortality and Morbidity" was carefully reviewed by the Committee and in consultation with representatives of the Children's Bureau, the National Institute of Neurological Diseases and Blindness, and the National Office of Vital Statistics (and the U. S. National Committee on Vital and Health Statistics). The Committee received from Dr. Richard D. Masland a detailed report of the National Collaborative Project, of which he is the Director. The interrelationships between, and the need for close work with, the Committee's endeavor and this research project of the N.I.N.D.B. were mutually agreed upon.

The third meeting of the Committee was held on April 11-12 in Oklahoma City. One day of this meeting, April 11, was devoted to a joint or regional meeting with medical society and health department representatives from eight states of this south-southwest area. The Committee acquainted the 34 participants in this meeting with what it has been doing on both maternal and newborn (and fetal) problems with special emphasis on the perinatal period. The Committee's new guide booklet for perinatal studies was presented, and the Committee's proposed "Supplement" to its "Guide" was discussed. The problem of adequate hospital and other records was emphasized and the Committee was asked to develop forms and lead an educational program to promote widespread utilization by individual doctors and hospitals.

PERINATAL STUDY PROJECT

A major objective of the Committee in its perinatal study project was the development of a booklet for distribution to state and local medical societies and health departments and individual hospitals for their use in promoting the establishment of and/or encouraging present programs designed to reduce perinatal mortality and morbidity. A 31-page booklet, "A Guide for the Study of Perinatal Mortality and Morbidity", was published in April of this year. This "Guide" is a basic program which allows for a great deal of flexibility in organization and operation of studies, but emphasizes the need to follow closely the concept of uniform terminology and uniform reporting of data. The objective of perinatal mortality and morbidity studies, as stated in the "Guide" booklet, ". . . . is to improve the production of normal human beings. The elimination of deaths and damage during the process of reproduction is the ideal for which we should strive. . . ." The "Guide" received the endorsement of the 12 organizations and agencies who participated in its development.

A "Supplement" to this "Guide" is now being prepared. It will contain forms and other materials that should more easily facilitate the initiation of new programs of study and promote a greater degree of uniformity.

PUBLICITY

In order to stimulate thought and action on perinatal problems several means have been utilized.

The editorial in the June 28, 1958, J. A. M. A. introduced a series of five articles on specific Perinatal Mortality and Morbidity Programs in the United States. These articles appeared in the following issues of The J. A. M. A.: June 28, July 5, July 19, July 26, and August 2, 1958. Reprints of the above editorial and series of articles, along with copies of the Philadelphia and Chicago Regional Conference Reports, and a leaflet containing the contents of the Committee's Exhibit on Perinatal Mortality and Morbidity were sent to state and county medical society executives and secretaries of interested national organizations.

The Committee's Exhibit on Perinatal Mortality and Morbidity was among the scientific exhibits at the annual meetings of the American College of Obstetricians and Gynecologists and the American Medical Association in Atlantic City in April and June respectively. Both the maternal and perinatal guide booklets were distributed to visitors of these exhibits as were other pertinent materials.

Committee members have been asked to participate in medical society and public health association sponsored meetings on several occasions this past year. Preparations are being made for similar responses to invitations for fall meetings.

FUTURE ACTIVITIES

The Committee on Maternal and Child Care believes that its present work and emphasis on the problems of the perinatal period is fundamental to continuing progress toward better health and well being of our future generations. Much progress has been made in reduction of maternal deaths and in reduction of infant deaths after the first month. But, as presented by the series of charts in its Exhibit, the Committee points out a contrast: the relatively small reduction over the same period, of deaths of newborn infants under one month and especially under seven days.

Doctor George W. Anderson, one of the leading scientific investigators in this field, has chosen to use the term "human reproductive failure" to encompass the loss of the products of conception at any stage before maturity. He has estimated this loss as over 800,000 per year (based on U. S. Vital Statistics for 1950). This ranks above any of the leading causes of death in the United States. Included in the total reproductive loss, too, are those cases of morbidity (neuropsychiatric disabilities such as cerebral palsy, epilepsy, and mental retardation and other congenital defects), many of which are more tragic than death itself.

The A. M. A. through its Committee on Maternal and Child Care and in cooperation with other organizations and agencies, both governmental and voluntary, has established the necessary groundwork for a nationwide, organized effort that should assist in solving many of the problems of the perinatal period. Action is necessary if the slowly decreasing mortality rate of infants is to be accelerated and, in fact, if the rate is not to increase as it did in 1958.

The Committee would urge greater consideration for these problems in order that human reproductive casualties be prevented to as great an extent as possible. These problems will be increasing as our population increases if vigorous and concerted efforts are not made. The 1955 population of children under 15 years of age was 48,800,000. In 1957, it was 52,000,000, and if the present rate of increase continues, the Bureau of the Census has estimated that by 1970 the population of children under 15 years will be 67,000,000.

By way of placing a perspective on the present and future problems facing the nation, it should be noted that in 1955 the population of those 65 years and over was 14,000,000. This had increased to 14,700,000 by 1957 and if present trends continue, will be 19,500,000 by 1970. It can be seen that the expected increase in both age groups is approximately the same—37% and 39% respectively. Experience has shown that planning and trying to look into the future for ways and means of meeting problems before they arise, is essential for every age group.

Committee on Medical Care for Industrial Workers

The members of this Committee are: Drs. Frank J. Holroyd*, Chairman, Princeton, West Virginia; T. J. Danaher*, Torrington, Connecticut; Edwin P. Jordan*, Charlottesville, Virginia; Melvin N. Newquist#, West Cornwall, Connecticut; Leo Price#, New York City, New York; William A. Sawyer#, Rochester, New York; Frederick W. Slobe#, Chicago, Illinois, and Clyde C. Sparks*, Ashland, Kentucky. Consultants are Dr. Donald A. Dukelow and Mr. Edwin J. Holman, Chicago.

*Appointed by Council on Medical Service

#Appointed by Board of Trustees upon recommendation of Council on Industrial Health

COMPULSORY TEMPORARY DISABILITY INSURANCE PROGRAMS

In the latter part of 1958, the Committee issued and distributed a publication consisting of five articles describing the statutory cash sickness disability programs of California, New Jersey, New York, Rhode Island, and the Railroad Retirement Board. These articles, based upon an outline developed by the Committee, were prepared by officers of the various agencies concerned. They deal with the historical development of each of the programs, eligibility aspects, program benefits, program administration and financing, and important statistical data of interest to physicians. A section in each of the articles deals specifically with the role of the medical profession in each of the programs.

Although no temporary disability insurance programs have been instituted since 1949, proposals for such legislation have been advanced in a number of states. The Committee will continue to follow any developments that occur and report periodically on them.

HEALTH AND INSURANCE PLANS UNDER COLLECTIVE BARGAINING

The Committee has published *A Summary Report on: Health and Insurance Plans under Collective Bargaining, Late 1955* mentioned in its last annual report. This summary report, widely distributed among medical societies, contains data relating to the provision of hospital, surgical and medical benefits in 300 plans which cover approximately five million workers, or about 40 percent of the total number of employees estimated to have been covered by health insurance plans under collective bargaining as of the end of 1955. Based upon a more detailed study of the Bureau of Labor Statistics, this publication has apparently proved helpful to physicians and medical societies interested in various types of coverage and provisions of collective bargaining agreements.

A PRELIMINARY GUIDE FOR MEASURING WORK ABSENCE DUE TO ILLNESS AND INJURY

This publication contains a number of definitions and formulae on the basis of which a uniform set of statistics can be developed by physicians and others who are concerned with the problem of work absence. This Guide has been published and has received wide distribution and publicity. This and several other publications dealing with the subject of absence from work round out the basic information physicians should have in studying the problem. J. A. M. A. has also published an article by the Committee entitled "Abstracts on Absence from Work and its Relation to Private Practice," which outlines some of the basic aspects of this problem, particularly those of interest to the physician in private practice in his relations with the physician in occupational medicine. The Committee hopes that physicians who provide services to small plants and establishments will be encouraged to follow this Guide in collecting data on the frequency and duration of absence from work.

PILOT STUDY ON HIRING PRACTICES OF OLDER WORKERS AND HANDICAPPED IN INDUSTRY; THE ROLE OF THE MEDICAL DIRECTOR IN ADVISING MANAGEMENT ON HEALTH INSURANCE

A pilot study designed to secure information on three matters of interest to the Committee was conducted in February, 1959, during the Annual Congress on Industrial Health. The Committee's questionnaire sought to inquire into industry practices in the hiring and retirement of older workers; policy in the employment of handicapped workers; and the role of medical directors of occupational health programs in advising management on health insurance coverage. Although the results of the survey are not to be considered conclusive or representative of practices in industry, they do reveal the existence of policy which limits the employment of older workers and which dictates the retirement of workers at age 65 or earlier.

A more enlightened attitude was revealed with regard to the employment of handicapped workers in that the majority of companies indicated that the physical and mental abilities of the individual were matched with the physical and mental demands of the job. Half of the medical directors reported that their advice was sought by management in matters concerning health insurance benefits for employees and in collective bargaining. Over 60 per cent of the medical directors of occupational health programs indicated that they assumed varying degrees of responsibility in the administration of health insurance programs and benefits.

The data secured in this pilot study has been made available to other committees of the A. M. A. interested in various aspects of this pilot survey, and the Committee will assist in the collection of additional data and information requested by these committees.

SURVEY OF PHYSICIANS' SERVICES PROVIDED TO SMALL PLANT OCCUPATIONAL HEALTH PROGRAMS

The Committee has completed its study of physicians' services provided to small plant occupational health programs. For the purpose of the survey, "small plants" were defined as those employing fewer than 500 employees. The objectives of the study were to explore, on a pilot basis, the validity of the opinions held by the Committee that: (1) physicians in private practice are, to some extent, already providing such occupational health services, (2) this experience can be used by other physicians as examples of what services and programs can be offered, and (3) thousands of additional physicians, if they were aware of the nature of the programs and the roles they can assume in supervising them, could be encouraged to take a greater interest in the development and expansion of such services to the overwhelming majority of small plants which do not presently make such programs available to their employees.

As of the beginning of 1959 some 99 per cent of all plants, employing approximately 80 per cent of the labor force, could be classified as small establishments. It was the opinion of the Committee that a full-scale attack on the problem of instituting such programs required a re-examination of the problem and an appraisal of the methods and techniques through which such services could be made available. The results of the survey confirm the Committee's belief that the physician in private practice can rightfully assume his full and proper role in the supervision and administration of such programs. Whether the physician practices by himself or as part of a group, the survey findings reveal that he can provide to employees in small establishments all or most of the services recommended in the "Statement on Scope, Objectives and Functions of Occupational Health Programs" adopted by the House of Delegates in June, 1957.

In its report to the Council on Industrial Health, the Committee observes that the physician, to serve an industry, must have knowledge of the working environment, the physical and mental demands it makes upon workers, and the physical and mental fitness for work of the employee or applicant. The physician in private practice, if he is aware of the special problems in small establishments, and interested in enlarging the scope of his practice, can supervise and administer an occupational health program for a small group of employees in an office or in an industrial establishment.

The report, which contains data gathered from replies from 200 physicians in private practice, has been submitted to the Council on Industrial Health for its information. Its publication, which is expected in the near future, will represent a contribution toward the solution of a problem which has received considerable attention over the past few years.

1958 SURVEY OF UNION HEALTH CENTERS

This survey was completed, and a publication entitled *A Survey of Union Health Centers, 1958* was released in the early part of the year. It contains descriptions of 29 health centers covering such items as (1) history, (2) membership, (3) objectives of programs, (4) facilities, (5) financing, (6) budget and operating costs, (7) administration, (8) business and professional personnel, (9) benefits, and (10) preventive aspects of services.

This is the third survey conducted by the Committee among the fifty union health centers in operation as of June 1, 1958. It contains, in addition to the description of each center, a number of tables which summarize some of the salient data, and a complete listing of union health centers. It also contains the "Guides for Evaluation of Management and Union Health Centers", as originally adopted by the House of Delegates in December, 1955 and revised in 1957 and 1958.

OTHER THIRD-PARTY DEVELOPMENTS

Since the publication of this survey, several developments of interest to the medical profession have taken place, one of these being the opening of a health center, the Medical Institute of Local 88, Amalgamated Meat Cutters and Butcher Workmen, St. Louis, in November, 1958. This center has received considerable publicity following the dismissal of the medical director by the union president. The medical staff has prepared "Articles of Agreement" and submitted them to the Board of Trustees of the Institute for approval. The "Articles of Agreement" set forth the rights and responsibilities of the Center's medical staff and Board of Trustees. One provision is that "The Institute shall be conducted in accordance with the 'Guides for the Evaluation of Management and Union Health Centers' adopted by the House of Delegates of the American Medical Association. . . ." In New York City, two health centers of the Amalgamated Meat Cutters were discontinued at the beginning of the year, while in Chicago a local of the Amalgamated Meat Cutters is building a diagnostic center. In Chicago, also, one union is discontinuing its union health centers and replacing this program with one of self-insurance in which each member may choose his physician. In Rochester, New York, the plans of the Amalgamated Clothing Workers Union to establish a diagnostic and ambulatory health center failed to materialize when enabling legislation could not be secured to cover ambulatory care.

The Committee is aware of other developments in which unions are establishing or planning to establish hospital and medical facilities. In Philadelphia, the AFL Medical Service Plan is planning to construct a 200-bed hospital and another union health center. In California, Sonoma County labor unions are planning to build a 150-bed hospital and clinic in Santa Rosa. The United Steelworkers has, as one of its objectives, the establishment of programs similar to those developed by the Kaiser Foundation Health Plan and to that planned by the Community Health Association in Detroit.

It was on the basis of this and other information that the Committee forcefully brought to the attention of the Committee on Insurance and Prepayment Plans of the Council on Medical Service, on January 17, 1959, the increasing dissatisfaction of unions with existing plans and the need for acquainting the medical profession with the nature of the demands of various unions. This dissatisfaction stems from criticisms of the costs, extent of coverage, and quality of medical care as they exist under current plans. The Committee noted the increasing demand for service benefits, comprehensive coverage, and control over certain abuses perpetrated by a small minority of physicians throughout the country. The Committee on Insurance and Prepayment Plans is conducting a series of regional meetings which are reported on elsewhere in the annual report of the Council on Medical Service.

FORMATION OF A NEW NATIONAL ORGANIZATION OF MEDICAL CARE PLANS

Apropos of the discussion of union health centers, the Committee calls attention to another development of interest to the medical profession. The American Labor Health Association, whose membership consists primarily of medical directors of union health centers, has merged with the Group Health Federation of America. The new organization, which has been renamed the Group Health Association of America, now has in it representatives of virtually all major plans and groups advocating group practice, prepayment, direct-service plans. Some of them, of course, favor comprehensive programs, others limited programs geared to the specific needs of the group to be served. The merger of these organizations, which took place in New York City at the Group Health Institute last May, had the strong support of the AFL-CIO.

It is interesting to note that there was not in evidence at this meeting the rancor toward or the criticism of the American Medical Association seen in the past. The restraint and self-criticism seemingly indicating a change in the attitude of some of the members of this organization appeared to stem from their favorable reaction to the *Report of the Commission on Medical Care Plans.* This, they felt, offered a basis for the development of more harmonious relations between these various medical care plans and the medical profession.

The Chairman of the AMA Board of Trustees participated in a panel discussion on the quality of medical care. This was the first time that an officer of the American Medical Association had spoken before either of these groups. His reception was a most cordial one, and there is ample evidence, now that the recommendations of the Commission's report have been adopted, that the groundwork has been laid for the development, on a bilateral basis, of guides to relationships which should be acceptable to all parties concerned.

GUIDES TO RELATIONSHIPS WITH MEDICAL CARE PLANS

The Committee on Medical Care for Industrial Workers is familiar with the contents of the Commission's report and believes that guides can be developed which would accomplish the objectives of the policy action taken by the House at the 1959 Annual Session. It is significant to note, in this respect, that no formal liaison has taken place between the Committee and the United Mine Workers of America Welfare and Retirement Fund since the 1957 Annual Session when the House adopted and the Fund rejected, the "Suggested Guides . . . UMA". The Committee has kept itself apprised of various developments on local and state levels, but has felt—as the reference committee on the 1958 Clinical Session stated the problem—"the necessity for a reassessment of some of the medical profession's previous policy statements and attitudes toward these plans, and the exercise of more rigorous controls and safeguards which will assure the provision of good medical care at a cost which the public can afford." The Committee believes that the House action on the *Report of the Commission on Medical Care Plans* affords a splendid opportunity for the resolution of some of the problems certain states have encountered in their relations with the medical program of the Fund as well as with other medical care plans.

Committee on Federal Medical Services

The membership of this committe has had one change during the year. Dr. Robert S. Green, Cincinnati, Ohio, was selected to replace Dr. Richard L. Meiling, Columbus, Ohio, who has been named a consultant. Other members are Drs. Russell B. Roth, Chairman, Erie, Pa.; Vincent W. Archer, Charlottesville, Va.; Henry S. Blake, Topeka, Kans.; Donald C. Conzett, Dubuque, Iowa; Oscar B. Hunter, Washington, D. C.; J. Lafe Ludwig, Los Angeles, Cal. In June 1959 Dr. Richard L. Meiling, Columbus, Ohio, was appointed a consultant to the Committee and for liaison with the Council on National Defense.

The Committee on Federal Medical Services held two meetings during the year, on October 19, 1958 and on February 7-8, 1959, at Chicago. It also met informally in conjunction with the Conference on Federal Medical Services at Minneapolis on December 1, 1958, and at the time of the conference between state associations with intermediary contracts and the V. A. Director of Clinics at Chicago on May 1, 1959.

PROSPECTUS OF ACTIVITIES

At its February 1959 meeting, the Committee adopted a formal statement of its over-all duties, subsequently approved by the Council on Medical Service. The Committee feels it would be appropriate to report the whole of this brief *Prospectus of Activities* for the information of the House of Delegates:

"*Major Responsibilities.*—These major responsibilities have to do with federal medical programs providing medical care or services to the *civilian population* as opposed to the military. The latter are the concern of the Council on National Defense. In matters concerning both civilian and military, the two Councils should work together through ad hoc committees.

"1. *To carry out present A. M. A. policy regarding federal medical services*

"2. *To keep informed on developments in federal medical care programs and develop liaison with their administrators*

"3. *To review and study these programs*
  a. In reference to A. M. A. policy
  b. In reference to their effect on care of those included in the program
  c. In reference to their effect on the care of the total population

"4. *To inform constituent medical associations on new developments and study findings and work with medical associations in their relationships to federal medical programs*

"5. *To suggest changes where indicated and through appropriate channels*
  a. In A. M. A. policy
  b. In legislation
  c. In program administration."

The Committee is also developing detailed methods for meeting its responsibilities in reference to particular federal programs within its scope of activities. One such method has already been designed in reference to Medicare, and similar statements will be drawn up in regard to other areas.

CONFERENCE ON FEDERAL MEDICAL SERVICES

On December 1, 1958, the Committee on Federal Medical Services sponsored a Conference on Federal Medical Services in Minneapolis during the Clinical Session. The conference was well-attended, with 194 registrants, exclusive of Committee members and panelists, from forty-eight states, including Alaska and Hawaii, and the District of Columbia. The morning session concentrated on two aspects of the medical programs of the Veterans' Administration, and the afternoon session on the Medicare program for servicemen's dependents.

V. A. Discussion

The first discussion, "The Future of Hometown Care Programs for the Veteran," concerned the three methods of administering Hometown Medical Care: intermediary contracts, direct agreements, and "designated physicians". Panel members represented state associations utilizing the three methods of administration.

The second topic, "Are Education and Research Essential to Veterans' Medical Care?", was discussed by representatives of the medical schools, the Special Medical Advisory Group to the Veterans' Administration, the American Medical Association Council on Medical Education and Hospitals, and two independent physicians. Positions were presented both for and against Veterans' Administration activity in the educational and research fields.

Medicare Discussion

The afternoon session, "Where Do We Go on Medicare?", included a detailed history of the program presented by General Wergeland, its director, a presentation of the Navy's attitude toward the program, and presentations by a Blue Shield administrator and three physicians presenting their states' reactions to the program.

The luncheon address, "Federal Medicine and the Private Patient," was given by Dr. Louis M. Orr, then president-elect of the American Medical Association and past chairman of the Committee on Federal Medical Services.

Conference Results

At the December 1958 session of the House of Delegates, the reference committee, in considering the Council's report on the Committee on Federal Medical Services, suggested that "the material derived from the Conference on Federal Medical Services, December 1, 1958, be made available to the medical profession as soon as possible." A four page resume of conference discussions was published in the Federal Medical Services *Newsletter 19*, February, 1959; Dr. Orr's luncheon address was published in The Journal of the

A. M. A., May 9, 1959; and the *Proceedings* of the Conference have been sent to all those attending, as well as to all those on the Federal Medical Services mailing list. Many additional copies have been distributed on request.

Subsequent actions of the House of Delegates and the Committee in regard to the problems discussed at the Conference are reported in the appropriate section of this report.

VETERANS' HOSPITALIZATION

Administration Policy

Several times during his administration, President Eisenhower has called attention to the problems involved in veterans' benefits, their cost, and the overlapping of the various federal and local programs of assistance to the needy. On February 26, 1959, in a letter to the Administrator of Veterans' Affairs, he finally made a full statement of his policies on V. A. hospital care. Four major points were listed, which will govern Presidential action on V. A. hospital construction and acquisition during the remainder of his term:

"(1) Continuance of complete, high quality hospital care for all veterans in need of such care for service-connected disabilities. Such care will be provided in hospitals of the Veterans' Administration, other Federal hospitals, and local community hospitals in the discretion of the Administrator.

"(2) Continuance, within the capacity of the 125,000 authorized beds in Veterans' Administration hospitals, of the care of war veterans with non-service-connected disabilities, *recognizing that basic responsibility lies with other governmental jurisdictions for providing hospital care for all citizens who are unable to defray the expenses of hospitalization.* (Italics added.)

"(3) Shifting of beds or hospitals from one type of use to another by the Administrator of Veterans' Affairs as may be permitted by law and advances in medical treatments.

"(4) With the approval of the President and subject to the availability of funds, construction to provide beds or hospitals for replacement and modernization or to compensate for major geographic shifts in veteran population, all within the over-all total of 125,000 authorized beds."

It is, accordingly, now official Administration policy that non-service-connected care will not be decreased but will, in fact, increase as the service-connected load is reduced.

(A more detailed analysis of the text of the letter was published in the Federal Medical Services *Newsletter 20*, April 1959.)

A. M. A. Policy on Veterans' Medical Care

Coming, as it did, during the midst of Administration pressures for decreased federal spending, the President's letter makes it clear that the executive branch does not feel curtailment of the V. A. hospital program is feasible at this time. A similar feeling was evidenced during the hearings by the House Committee on Veterans' Affairs at which, on July 24, 1958, Dr. Roth presented the American Medical Association's recommendations, the bases of its policy, and possible alternatives to the present system. (Dr. Roth's testimony was published in THE JOURNAL of the A. M. A., September 13, 1958, and in Federal Medical Services *Newsletter 18*, October-November, 1958.) Although Dr. Roth was cordially received and one member of the committee expressed himself as in agreement with "considerable" portions of his statement, at another point in the hearings a committee member stated "I do not think today you could get one single member of Congress to introduce a bill" to eliminate non-service-connected treatment.

However, the Committee on Federal Medical Services feels it appropriate to note that the House of Representatives passed, this year, a new veterans' pension bill, on the assumption that it would substantially reduce the long-term cost of pensions for non-service-connected disability. Since this bill is not directely related to veterans' medical care, the Committee does not feel in a position to endorse it either in part or in whole; however, its passage does indicate that similar curtailment of non-service-connected hospitalization is by no means a lost cause.

Such curtailment, however, will most probably require much greater public interest than has thus far been aroused, and the Committee feels that this must be achieved by action at the local level. Congress and the Administration apparently are both convinced that the present medical program is an object of public support or, at best, of public indifference; only a groundswell of aroused public indignation is liable to bring about a change in existing admission policies, and such indignation can be brought about much more effectively through local contacts than through discussion at the national level only.

The Committee has already distributed to individuals and groups a large number of leaflets presenting the medical profession's position to the general public (see report on Committee Publications). The Council suggests *that further widespread diffusion of these leaflets, as well as of future similar Committee publications, coupled with discussion of the medical profession's policy by well-informed medical speakers before non-medical groups, at the local level, will do much to gain the popular support that is apparently essential to legislative improvement of this program.*

At the same time, the Committee will, of course, continue to exert its best efforts at all possible points on the national level to achieve the Association's stated objective of limiting Federal responsibility to the service-connected case.

Action Under Present Law

While this long-term campaign continues, the Council wishes to call attention to the second portion of the official policy, as reaffirmed in November 1956 by the House of Delegates: "While the present law exists, we should help insure that veterans whose illness constitutes economic disaster will not be displaced by those suffering short-term remediable ills that, at worst, constitute financial inconvenience." The Council called this recommendation to the attention of the medical profession in its 1957 and 1958 reports; reference committee reports have reiterated this recommendation and requested the state associations to report any activity in this area to the Committee. The Committee has, however, in the past two and one half years, received little information regarding medical association action in this regard.

Veterans' Administration admission procedures at present make little actual effort to distinguish between degrees of financial need. With his application for admission, the veteran without a service-connected disability fills out a statement of assets and liabilities, and is subject to prosecution for any false statements made therein, but this statement is intended as a guide to the veteran, rather than to the admitting officer; it may not be used as a reason for denying admission. Admitting officers are also supposed to give the applicant an estimate of the cost of care for his illness at a local private hospital, if his disability is a short-term one, but here again the procedure is intended only as a guide, so that the applicant can better decide whether he is able to afford private care.

The only case in which relative ability to pay actually affects admission priority is that where the disability is totally covered by workmen's compensation or occupational injury insurance. In this case, the applicant is placed in the lowest admission priority category—but only on receipt by the V. A. of a written statement from the insuring agency that the veteran will have nothing to pay for his care. Even then, he cannot be refused admission, only placed in the last group on the waiting list.

Under such admission procedures, it is obvious that care may frequently be given to those who could pay at only a slight hardship to themselves, while long-term, financially disastrous cases may be forced to wait. So long as Administration policy prohibits a decrease in the total number of authorized V. A. beds, some rational policy should be established to ensure that non-service-connected care is given first to those who are truly incapable of meeting the cost from their own resources.

The Council therefore suggests *that the House of Delegates recommend the following basic improvements in admission policies for non-service-connected treatment in Veterans' Administration hospitals:*

1. *A realistic definition of "inability to defray necessary expenses."* At present the veteran is the sole judge of the meaning of this phrase and may, in all sincerity, consider himself unable to pay when other veterans in like circumstances would feel no need to seek assistance from public funds. Present admission policies encourage this attitude, since the existence of hospital and medical prepayment coverage in no way disqualifies an applicant, even should it cover the total cost of care. The Administrator of Veterans' Affairs should establish some realistic criteria, based on the veterans' resources and those of his family, his liabilities, and his responsibilities, which would help both the admitting officer and the veteran himself to determine whether he is truly eligible.
2. *A realistic estimate of the cost of care.* V. A. regulations instruct the admitting officer, in short-term cases, to give the applicant an estimate of the cost of needed care at non-Federal hospitals. The success of the application of the criteria will depend on the accuracy of this estimate.

The Council recommends that the Department of Economic Research review the formulas used and report to the Committee, at which time it will make recommendations to the Council on Medical Service with possible distribution to the state medical associations.

At present, admission priorities to V. A. hospitals take no account of the degree of financial need of the applicant. The question of whether hospitalization and medical care costs will be catastrophic, or merely inconvenient, is not considered, except for veterans whose medical costs are completely covered either under workmen's compensation or industrial accident insurance.

As long as non-service-connected care is continued, the Council recommends *that the Veterans Administration establish formal priorities for admission for non-service-connected care whereby first consideration will be given to those veterans with financially disastrous chronic, long-term illnesses and those who require intensive hospital care and other costly treatment, and lowest priority will go for those with acute short-term illnesses which cause only temporary financial inconvenience, particularly where much of the cost is covered by insurance or prepayment plans.*

The Committee does not relinquish its firm belief that, as President Eisenhower has stated, non-service-connected care is not the basic responsibility of the Federal government. Nonetheless, it is of the opinion that, so long as the Federal government retains this responsibility, the recommended changes in admission procedures, established by law or regulation as necessary, will do much to help those veterans who need help the most.

The Council suggests *that the House again urge all state associations*

1. *To assist acti[illegible]ed care for those veterans with [illegible] disabilities,*
2. *To help veteran patients determine the probable cost of care so that they may more accurately judge their ability to pay, considering the extent of their insurance coverage,*
3. *To establish liaison with Veterans' Administration hospitals to assist in estimating the cost of private care and to facilitate the admission of such catastrophic cases, and*
4. *To take such other steps as are advisable locally to assist veterans and their organizations in assuring that this care is provided for those who need it most.*

The Council also requests that it be informed of any steps of current thinking regarding health care of the aged and to provide him with concrete health recommendations which he could translate to his own older patients. The meeting featured a series of panels devoted to "Diseases Among the Aged," "Nutritional Counseling," "Promoting Physical Fitness," and "Motivating the Older Person." Each panel presentation was followed by a discussion period in which the primary interests of the audience were explored. The session was closed with a summary of the health recommendations brought out during the day in a formula for full living for the aged person.

JOINT COUNCIL TO IMPROVE THE HEALTH CARE OF THE AGED

As described in the last annual report of the Council, the Joint Council was created in 1958 by the American Medical Association, the American Dental Association, the American Hospital Association, and the American Nursing Home Association, to coordinate the efforts of these four organizations in identifying and analyzing the health needs of the aged, appraising available health resources, and developing community programs to foster the best possible health care for the aging.

At the request of the Board of the Joint Council, the American Medical Association through its Committee on Aging has contacted state medical associations, urging them to take the initiative in establishing joint councils at the state level, and has provided each association with the names and addresses of the appropriate state dental, hospital, and nursing home association affiliates. The States of Massachusetts, Iowa, Michigan, Texas, Illinois, and Georgia now have actively functioning joint councils, and eight additional states are in the process of forming such councils.

THE WHITE HOUSE CONFERENCE

In 1958, Congress passed an act calling for a National White House Conference on Aging to be held in 1961 under auspices of the Department of Health, Education, and Welfare. This conference will bring together representatives of government at all levels, all types of professional and lay groups, and the general public including older people themselves from every state, territory, and possession, to develop plans of action for utilizing the untapped skills, experience, and energies of older people. The act also provides for funds to assist states in holding pre-conference meetings. The Committee continues to advise and alert state medical associations as to plans for state conferences, so that medicine will be adequately represented in pre-conference activities. A number of states have already held exploratory meetings, at which medicine has been well represented.

In June of this year, Secretary Flemming of the Department of Health, Education, and Welfare announced appointment of 130 persons to a Citizen's Advisory Committee which will assume over-all direction of the plans, preparations, and conduct of the White House Conference. Drs. Frederick C. Swartz and Edward L. Bortz of the Committee have been named as members of this group. Eleven other members of the American Medical Association have also been appointed to the Committee.

The National Leadership Training Institute for the White House Conference, held June 24-26, was designed to provide instruction and guidance for national organizations, state officials, federal personnel, and state and community volunteer leaders in preparation for local and state activities relating to the White House Conference. Medicine was well represented with physicians from 20 state medical associations present at the request of the Committee on Aging.

MEDICINE'S BLUEPRINT

"Medicine's Blueprint for the New Era of Aging: A Positive Health Program for Older Citizens," discussed in the previous Annual Report by the Committee and Supplementary Report of the Council, has been reprinted. As of June 1, 1959, the initial printing of 25,000 was exhausted. Because of the continuing volume of requests for this publication, the Committee found it necessary to order an additional 25,000 copies.

This 21-page publication sets forth six areas for action by medicine in meeting needs of the aging. Its program has formed the basis for increased leadership by constituent and component medical societies in programs for the older citizen.

HEALTH ASPECTS OF AGING

"Health Aspects of Aging," a brochure containing 12 articles on various aspects of the aging problem, (described in the last Annual Report of the Committee) has been reprinted. Numerous requests for this brochure are being received from Red Cross chapters, hospitals and nursing homes, health and welfare agencies, schools, and other groups and individuals for use in programs of staff training and public education.

CHRONIC ILLNESS NEWSLETTER

The Council has continued bi-monthly publication of the Chronic Illness Newsletter. As before, emphasis continues to be placed on specific programs and projects at community and regional levels. The mailing list for this publication now approximates 7,000. Requests continue to be received for extra copies of various issues, and a number of Newsletter articles have been reprinted in "Aging" (published by the Special Staff on Aging of Health, Education, and Welfare), local health department bulletins, and other media. Newsletter content continues to be supervised by an Editorial Advisory Committee composed of Doctor Henry B. Mulholland, Doctor Dean W. Roberts, and Mrs. Lucille Smith, former members of the National Commission on Chronic Illness, and Doctor Edward L. Bortz, Consultant to the Committee on Aging.

CENTRAL INFORMATION AND REFERRAL SERVICES

A survey of central information and referral services for the chronically ill has been completed. Reports on four of these centers operating in Chicago, Milwaukee, Cleveland, and San Francisco have been published in The Journal. This material has also been reprinted in brochure form.

There are presently five such services operating in this country; the four mentioned above and an additional service in Essex County, New Jersey. These centers seem to be most useful in densely populated metropolitan areas, where there is often a lack of centralized information on the many services and facilities available for long term care. In less densely populated areas such informational and referral services are often handled quite adequately by already existing agencies such as local health or welfare departments.

National Health Forum, 1960

Doctor Edward L. Bortz, Consultant to the Committee, has been named as chairman of the 1960 National Health Forum sponsored by the National Health Council. The 1960 Forum will have as its theme the Health of the Older People.

International Congress of Gerontology

At the invitation of Doctor Herman T. Blumenthal, who is chairman of the North American Committee for Aging Research and Clinical Medicine, Doctor Theodore G. Klumpp will be serving as a member of Doctor Blumenthal's Committee in developing the program of the International Congress of Gerontology to be held at San Francisco in the summer of 1960. Mr. Lewis Kuplan, President of the Gerontological Society, has requested that the Committee on Aging present a scientific program, similar to that given at the Annual Session, during an evening session of the International Congress on Gerontology. The Committee at its June 12 meeting in Washington, D. C. agreed to prepare papers for such a program.

Memoranda to State Committees

In order to keep state medical societies informed regarding current activities in the field of aging, the Committee has initiated the practice of sending periodic consolidated memoranda to the president, executive secretary, and chairman of the committee on aging of each state society.

Respectfully submitted,

John Flack Burton, M.D.
Reuben B. Chrisman, Jr., M.D.
T. J. Danaher, M.D.
Gunnar Gundersen, M.D.
J. Lafe Ludwig, M.D., Chairman
Robert L. Novy, M.D.
Russell B. Roth, M.D.
Carlton E. Wertz, M.D., Vice Chairman
Hoyt B. Woolley, M.D.
Willard A. Wright, M.D.
Mr. George W. Cooley, Secretary

REPORT OF THE COMMITTEE ON MEDICAL PRACTICES

The Committee on Medical Practices has held three meetings and has conducted the first of a series of projected regional meetings since its last report to the House.

The following members comprise the committee: Dr. Lester D. Bibler, Chairman, Indianapolis; Dr. J. S. DeTar, Milan, Michigan, who replaced Dr. W. Andrew Bunten; Dr. James P. Hammond, Bennington, Vermont; Dr. James M. Kolb, Clarksville, Arkansas; and Dr. Elmer G. Shelley, North East, Pennsylvania. Staff: George W. Cooley, Staff Secretary; Murray Klutch, Research Associate.

The Committee's activities have been directed toward the implementation of the policy action adopted by the House of Delegates (1958 Clinical Session) with regard to the conduct of relative value studies by constituent medical associations. It has acknowledged the importance and necessity of acquainting the medical profession with the opinions and judgment of the delegates regarding the urgency of carrying out these studies by holding regional conferences, by meeting with representatives of various specialty and professional groups as well as of Blue Shield and private insurance organizations, and by issuing a number of publications dealing with the major facets of relative value studies. It has been guided in its efforts, to a large extent, by the admonition given to the House by the reference committee at the 1958 Clinical Session which stated, in part:

> Your reference committee is of the opinion that the need for a study or studies is apparent and demonstrable in the light of current developments. It is also of the opinion that unless medicine does undertake this activity, it may be done by others who are less qualified.

The decision of the House of Delegates to adopt the Committee's proposal to recommend universal adoption of the nomenclature and coding system developed by the California Medical Association enabled the Committee to lay the groundwork for the preparation of a series of six Relative Value Publications to date. These have received considerable distribution, and are being used as the basis for conference discussions and educational efforts. The following is a brief description of the contents of each publication.

Relative Value Publication No. 1 consists of a statement containing the background, objectives, and need for such a study. It also includes the Report of the Committee and the action of the House at the 1958 Clinical Session.

Relative Value Publication No. 2 contains a listing of the code numbers and nomenclature as developed by the California Medical Association and as contained in the 2nd edition of that state's study which was issued in November, 1957. The Committee has adhered to the directive of the House by omitting from this publication any listing of unit and/or dollar values for medical services.

Relative Value Publication No. 3 consists of a suggested format for the conduct of a relative value study. It is based upon a resurvey schedule developed by the California Medical Association. This publication is currently being revised and designed by the Committee so that it may be used as a standardized survey schedule by any constituent medical association desiring to conduct a study.

Relative Value Publication No. 4 contains a check list of Things to be Done; that is, some important elements and factors to be considered in the planning, development, and conduct of a relative value study.

Relative Value Publication No. 5 comprises a series of questions most commonly asked by physicians and medical societies about such studies, and provides clear and concise answers to them.

Relative Value Publication No. 6 consists of a group of charts and visual aid presentations to highlight various aspects of relative value studies. Distribution of this leaflet is confined to participants of regional conferences.

In addition to the foregoing, the Committee has published detailed *Proceedings* of its First Regional Conference on Relative Value Studies held in San Francisco on April 11, 1959. This publication contains much of the basic information physicians will need to become acquainted with this development.

The success of the First Regional Conference, which was attended by representatives from ten western states, can be attributed largely to the cooperation of the California Medical Association and to those of its members who have been studying this problem for a number of years. The Committee is particularly indebted, among others, to Dr. Francis J. Cox (San Francisco) who has given it the advice, leadership, and the benefit of his broad experience and knowledge of this subject. His consulting services represent an outstanding example of the devotion and dedication of a physician to the socio-economic problems of medicine. The Committee is also indebted to Drs. Donald C. Harrington (Stockton, California) and William J. Reals (Wichita, Kansas) for their many and invaluable contributions to the varied activities of the Committee. It gratefully acknowledges the advice and assistance of Drs. DeWitt Burnham (San Francisco) and Henry D. Hoskins (Oakland), and is most appreciative of the cooperation and assistance rendered to it by Mr. Robert L. Thomas, Assistant Executive Secretary of the California Medical Association.

In gauging the effectiveness of its efforts, the Committee can, perforce, only be guided by the response of an audience to the message it has to deliver. It was apparent from the discussions and the broad range of questions at the First Regional Conference that the philosophy and concept of the relative value study contains within it the seeds and potentials of meeting and resolving many of the problems physicians and medical societies have encountered in the development and administration of prepayment insurance programs. Such studies, it was revealed, also represent tangible assets in the development of fees for programs supervised by health and welfare funds or directed by numerous state and federal administrative agencies.

The results of its discussions with physicians and representatives of other organizations concerned in the administration of health insurance programs have reinforced the belief of the Committee that there is a demonstrated need for the development of relative value studies—a need expressed by trustees of funds for a more scientific accounting of the monies expended for medical care, by the patient for a better understanding of the basis for physicians' charges, and by the physician in his private practice to explain to the patient the basis for his charges.

A consequence of the Conference was that seven of the ten states indicated a desire to receive survey materials for further discussion with their medical societies in preparation for the possible conduct of relative value studies. The outcome of this meeting, which served as a pilot in determining whether other regional conferences should be held, was that the Committee scheduled two additional conferences for this fall: one for the New England states in Boston, and one for the midwestern states in Indianapolis.

This educational effort to acquaint medical societies with the fundamentals of relative values represents only part of the activities of the Committee. Simultaneously, the Committee has been meeting with representatives of various specialty groups, Blue Shield, and private insurance companies. It is keeping itself informed of efforts both within and without the medical profession to develop relative value studies or schedules—and at least one of these bears out the warning of the Committee and the reference committee that, "it may be done by others who are less qualified" unless the medical profession does it first. The Committee is pursuing this development further and hopes to be able to correct this situation and to prevent its recurrence in the future. The Committee believes that the attention of the House should be drawn to a development in Canada where the creation of a system of relative values on a time-study basis of medical practice is being attempted. Such a determination will be made by lay individuals, primarily. The Committee is of the opinion that such a method would be far less acceptable, if at all, to the medical profession in this country than the method this Committee is employing.

The Committee wishes to inform the House that there is by no means unanimity of opinion among all physicians concerning the acceptance of the concept underlying relative value studies. From its contacts, discussions and correspondence, the Committee is aware that there are some physicians and medical societies and at least one small association of physicians that are opposed to relative value studies for philosophic or economic reasons. Perhaps the outstanding one is the fear that relative values can culminate in the establishment of fixed schedules of fees for physicians' services. Another reservation is based on the assertion that such a system interferes with the traditional right of a physician to determine, without any interference whatever, the fees he may charge his patients. Where lack of interest, rather than opposition, is expressed, it is largely attributable to the stated absence of any problem which may necessitate the adoption of relative values.

In its Report to the House last December, the Committee stated that although relative values *are not fees*, they may be used, where desired, as the basis for the establishment of fees. Some of the opposition to relative values is based on an erroneous assumption that relative values will conclusively result in fixed fees for all physicians. It is possible, however, to develop mutually satisfactory fee schedules which are based upon unit values, depending upon a specific or particular circumstance or situation as determined by the individual state medical society. For example, a medical society may wish to negotiate with a state or federal agency and agree to apply specific dollars and cents coefficients to categories of unit values in order to arrive at fee schedules in which physicians may participate if they desire to do so. This, it should be pointed out to the House, is already being done under various governmental programs without benefit of a relative value index. The application of a relative value study to a situation like this would, however, bring order and scientific application of dollar values where, perhaps, custom and guesswork have previously existed. Thus, relative values can correct and improve deficiencies in existing programs. They can benefit the physician rather than perpetuate inequities which he has been unable to rectify because he has previously had no scientific basis upon which to prove his contention that existing fee relationships were outmoded. This same application could be made to certain health and welfare funds, the trustees of which might wish to secure a more scientific accounting of the dollars spent for medical care or might wish to secure specific types of coverage for the members they serve. Examples of these are the application of relative values to Medicare fee schedules and the creation of Foundations by physicians as in the case of the San Joaquin County Foundation for Medical Care.

For these and other reasons, the application of relative values to the development of insurance contracts can be of invaluable assistance to the insurer—whether it be a medical society approved plan or an insurance carrier. Not to be lost sight of, however, is one of the over-riding reasons the House of Delegates authorized the appointment of this Committee and that was to bring into greater harmony a recognition of the value of the services provided by all physicians. Relative values represent a method whereby this understanding and public education can be created. Moreover, by instilling the proper perspective of the relationship of the value of one type of medical service to another, relative values provide the medium by which all physicians may explain the reasonableness of their charges and reduce to a minimum misunderstandings and mistaken impressions among the general public.

As of the date of the preparation of this report, a number of states, in addition to that of California, have adopted relative value studies or have applied them in their prepayment programs. They are: Arkansas, Iowa, Kansas, Maine, Michigan, Utah, and the District of Columbia. Some of these and a number of others are planning to conduct relative value studies in the very near future. Many others are studying this development and have appointed committees or individuals to investigate the advisability of conducting studies. Future Committee reports will enumerate these developments.

The Committee concludes its report to the House by recommending that it be permitted to use the term "relative value index" interchangeably with "relative value study." The former term, it is believed, is more accurately descriptive of the system of unit values derived from a relative value study, and attempts to strengthen further the true meaning and application of unit values.

Respectfully submitted,

Lester D. Bibler, *Chairman*
James P. Hammond
Elmer G. Shelley
J. S. De Tar
James M. Kolb

REPORT OF THE WOMAN'S AUXILIARY

To the Members of the House of Delegates
of the American Medical Association:

The 1959 convention of the Woman's Auxiliary to the American Medical Association held in Atlantic City concluded our 36th year of service in health education. This summary covers the year 1958-1959 under the presidency of Mrs. E. Arthur Underwood, who stated in one of her reports, "There may be a redirection of emphasis as old obstacles are passed and new ones come into focus in this ever-changing world about us. But our goal remains the same. There is continuity of program, and no change in purpose. Our objective, simply stated, and our theme is Safeguard Today's Health For Tomorrow. The individual's being well determines the community's well-being." Numerous applications and areas for action were suggested by Dr. Gunnar Gundersen in an article in our September 1958 Bulletin, "Variations on a Theme." This served as an inspiration, and expanded our horizons of service for the year. Reports from 50 state auxiliaries showed that our members made a united effort to consolidate the value of their citizenship by participating in worthwhile community activities. Approximately 32 per cent of our members reported 2,577,000 hours of service.

As a bridge between the years, at Mrs. Paul C. Craig's recommendation, Mrs. Underwood as president-elect wrote "The Changing of the Guard," a forecast of plans and priority projects for 1958-1959, which appeared in the May, 1958 Bulletin. Response gave us the incentive to supply material to state officers and chairmen early in the year. "Information, Please!" a compilation of approved resource material, was a result. Mrs. Charles Flynn, our program chairman, was responsible for the idea and its original execution, wherein all committee chairmen's plans were summarized, with the sources indicated.

Areas selected for concerted effort were the American Medical Education Foundation, to which we contributed $140,500 this year, bringing our total contribution to $660,000 since 1951. Individual donations are not necessarily larger, but many more are participating and giving. Chairmanship of A.M.E.F. is a cherished post because we receive such splendid cooperation and direction from staff members of the American Medical Association.

At the direction of the 1958 convention, a loan of $3,000 without interest was made to the Woman's Auxiliary to the Student American Medical Association, which held its second convention in Chicago this year. Its president was a guest at our Fall Conference. Mrs. William Mackersie was liaison between the Woman's Auxiliary to the A. M. A. and the Woman's Auxiliary to the S.A.M.A.

By vote at the 1958 convention we also made token gifts of $100 each to the United States Committee of the World Medical Association, the Crusade for Freedom, and the Student American Medical Association Loan Fund for medical students; and $5,000 to the American Medical Education Foundation in memory of our members who died in 1958-1959.

In 1958-1959 we were responsible for 52,885 subscriptions to Today's Health magazine.

Recruitment to paramedical careers has assumed greater importance in our relationships at the community level. Our constituent auxiliaries and other organizations were informed of the opportunities and the needs in the field of paramedical careers. Projects for promoting recruitment of young men and women in these allied fields were developed and implemented in the state and county auxiliaries. We provided $131,612 in scholarships, and another $75,000 in student loans this year.

Noteworthy service was performed in the field of safety in cooperation with the National Safety Council and local organizations which had selected safety as their project.

Through 1958-1959 every division of the American Medical Association has given assistance to Auxiliary officers, national and state. The value of the cooperation and guidance can be measured by our service at the community level. Dr. Gunnar Gundersen, Dr. F. J. L. Blasingame, and members of the Board of Trustees have given of their time and have always been willing to offer guidance to our leaders. Dr. Ernest B. Howard, our liaison to the Advisory Council, consults with us, and at our convention and conference has given us an up-to-the-minute summary of events about which it is important for us to have accurate information.

Dr. Louis M. Orr's suggestion at a convention luncheon that representatives of the Woman's Auxiliary attend the meetings of the House of Delegates to bring us information was well received.

The AMA News has proven a fine source of timely information to officers and chairmen this year.

A. M. A. Division Directors were most helpful at our conference, and at their respective meetings, particularly the Public Relations Institute, the Committee on Civil Defense, Council on Mental Health, the State Chairmen's meeting of A.M.E.F., and Council on Rural Health. We are grateful for Mr. Leo Brown's guidance in the field of communications, service and public relations.

It is customary for the national president to attend state auxiliary conventions or conferences, and to represent the Auxiliary at meetings of non-medical organizations with which we have associations. Mrs. Underwood took part in 28 state conventions and three state conferences. Other national officers attended other state meetings. Mrs. Underwood reported to the A. M. A. House of Delegates at both the Annual and Clinical sessions, and with other officers was a guest of the A. M. A. Public Relations Institute, Committee on Civil Defense, Council on Mental Health and Council on Rural Health. At the Rural Health conference in Wichita, Mrs. Underwood gave a professional paper on dentistry. She attended the convention of the Woman's Auxiliary to the Southern Medical Association, and participated in a panel, "Should Drunken Drivers (First Offense) Go To Jail," at the National Safety Congress. During the Congress she was appointed to the executive committee of the Woman's Activities Division of the National Safety Council, and the chairmanship of the membership committee. She served as a judge for the National

Safety Council's Carol Lane Awards. She also attended the course in civil defense and survival medicine at Brooke Army Medical Center at Fort Sam Houston, Texas.

Other officers represented the Auxiliary at meetings of the American Cancer Society, American Bar Association Traffic Court program, American Dietetic Association, National Association for Mental Health, The National Foundation, Commission on Health Careers, Western Council of State Leagues of Nursing, Woman's Auxiliary to the Student American Medical Association, Council of National Organizations on Children and Youth of the White House Conference on Children and Youth; National Woman's Advisory Committee to the Office of Defense and Civilian Mobilization; the A. M. A. Council on Legislative Activities, and the Traffic and American Bar Association Seminar.

Mrs. Underwood stated that one of the highlights of the year was the invitation extended by Dr. Gunnar Gundersen to be an official observer at the World Medical Association meeting held in Copenhagen in August, which she attended at her own expense. "Men of medicine of the world look to the American Medical Association for leadership. This places members of the Woman's Auxiliary in a position of direct responsibility."

She also attended the meeting of the Woman's Auxiliary to the Alaska Medical Association in Juneau and spent half a day in the new State Legislature; also the convention of the Woman's Auxiliary to the Hawaiian Medical Association in Hilo.

Our membership is 78,221. National active members are the wives of active or service members of the American Medical Association (or widows of men who were in good standing at the time of their death). National associate members are those members of constituent auxiliaries who do not qualify for active membership. We realize that an active, enthusiastic membership will allow us to formulate and pursue the goals we wish to achieve in community service. To learn what needs to be done, we must develop our capacities of observation and techniques for measuring the needs of our community. To this end, we need the guidance of every member of the American Medical Association. Our activities should be confined to those problems for which we are fitted by education and interest, and where we receive A. M. A. guidance.

When he spoke to the members of our conference last fall, Dr. Gundersen said, " I am very happy to salute the Woman's Auxiliary and to express the very sincere hope that, in the days that lie ahead, your organization, the Auxiliary, will continue to enjoy the confidence and respect of the public, whom, after all, you are privileged to serve with fidelity and to whom your lives and our lives are dedicated in the very finest tradition of our noble calling."

If each member does her best, we will merit the confidence expressed by Dr. F. J. L. Blasingame, "I believe it is essential that you do not underestimate your value to the medical profession because you are a most valuable asset. Thus, you have a tremendous responsibility that you have been meeting wonderfully well. However, when we look at the problems around us, we realize we cannot rest on our laurels. It is proper and timely that we re-examine ourselves to see how each of us can best measure up to the problems of the day."

Dr. Louis M. Orr stated, "I am convinced that we in the A. M. A. and the Auxiliary must take our story to the public and give them the facts so that they can recognize the dangers of legislation such as has been introduced by Representative Aimee Forand and others. Forand-type legislation is part of the whole modern day pattern of obtaining security and the comfortable life at the expense of personal freedom. Can we afford to allow any part of our freedom to be taken away from us via legislation? Indeed not. People must have freedom if the nation is to be free."

Today we look to the years ahead. The Joint Council for the Health Care of the Aged, formed in April, 1958, directs many of our activities toward the care of the aged. Mr. Leo Brown, Director of the Communications Division of the A. M. A., has stated "True happiness comes from helping others." For the future of our nation, freedom is important, and as Dr. Orr has pointed out, "Let us be cautious about allowing the federal government to solve every matter that arises. Getting rid of responsibility does not give an individual more freedom." To deserve freedom, we can do no less than accept "individual responsibility for better community health."

"The Year Ahead," our overall Auxiliary program for 1959-1960, appeared in our May Bulletin and in workbooks presented to officers and chairmen at the planning meeting which closed our convention. A program of action to meet our goals is the aim of our fall conference of state presidents, presidents-elect and national officers and committee chairmen in Chicago. Mrs. William Mackersie, our president-elect, is the presiding officer.

The continued supervision and help which state medical societies are giving our state auxiliary leaders have resulted in better informed leadership and a greater sense of responsibility. We can do no less than actively support the 1959-1960 Auxiliary objective: "Individual Responsibility for Better Community Health."

Mrs. Frank Gastineau, *President*

August 24, 1959

REPORT OF THE AMERICAN MEDICAL EDUCATION FOUNDATION

This report summarizes the last half of the Foundation's eighth year and the first half of the ninth.

The Foundation continued its growth both in the number of contributors and amount contributed towards the financial aid of the nation's 85 medical schools. As of December 31, 1958, the total contributed since 1951 had reached $7,159,182. Contributions for 1958 reached a record breaking $1,120,045 plus interest earned during the year. Contributors in 1958 jumped from 44,155 to 49,730. During the first half of 1959 the total, since 1951, had reached $8,028,365.

The figures for the first six months of 1959 indicate that this year will see a sizeable increase in the number of contributors. This steady growth of support by organized medicine reflects its growing awareness of the necessity for private aid to the nation's medical schools. Heavy activity during the year in state after state is an even more graphic example of this awareness. Together with the growth of support for AMEF is a similar increase in contributions direct to the schools. Many physicians who first contributed to AMEF now report that they have responded to a direct appeal from their schools. Altogether, American medicine is responding to its obligation in a more significant manner each year.

Distribution of Annual Grants to the Schools.—Formal distribution of 1958 grants was made at a special ceremony during the Congress on Medical Education and Licensure at the Palmer House, February 9, 1959, in Chicago. The grants were presented to Dr. John McK. Mitchell, representing the medical schools, by Dr. George F. Lull, President of the AMEF. The total amount distributed was $1,133,257. Of this amount, $627,947 was specifically designated by donors for their schools. The remaining $505,300 was distributed in equal grants of $6,200 for four-year schools, and $3,100 for two-year schools of basic science. Within several weeks letters had been received from the deans of these schools outlining the uses to which the funds would be put. Almost all of the correspondents emphasized that the grants were particularly important because of their unrestricted nature. The varying uses to which the funds were put graphically illustrated their extra-budgetary nature and re-emphasized the continued importance of the American Medical Education Foundation's efforts.

State Activities and Gifts.—The continued success of AMEF tends to prove the value of different approaches in several parts of the country. While it is impossible to enumerate the individual activities in each state and area, it may be said that generally the intensive annual campaign for the Foundation follows one of several general patterns. Of these the most frequently used is the mail campaign. Another is the campaign of individual solicitation. Still a third is a combination of these two or a combination of mail and telephone appeals. The ingenuity and resourcefulness of state and county chairmen throughout the country have altered and embellished this type of campaign. For the past two years a collection of the most successful of these campaigns has been compiled and distributed to all committees.

The dues increase program has expanded with the inclusion of Georgia, which has instituted a $5.00 increase to be included in the constituent county dues structure for AMEF. A stipulated amount for AMEF, added to the dues, was included as an optional payment in the programs placed in effect in Connecticut, Maryland and Michigan. Identical plans have been proposed in New Hampshire, Virginia and West Virginia that will be considered by the Houses of Delegates of these states in the fall of 1959.

Contributions in 1958 from most of the states showed increases over previous years' efforts, ranging from $9.00 to more than $31,000 in one instance. Alaska, making its contribution for the first time as a state, went from $125 in 1957, to $1,414 in 1958. Illinois, again, led the list of the states in total monies given with $200,191. Nevada, however, kept its leading position by again giving the largest amount from each individual physician and a participation from the Nevada State Medical Society of well in excess of 100 per cent because a number of physicians gave several times.

Several gifts were received during the year which are worthy of special mention. Of these the largest was one of $25,000 received as a treasury gift from the Medical Society of New Jersey. Audio-Digest Foundation, a non-profit subsidiary of the California Medical Association, presented a check for $10,000 to AMEF during the California meeting in February, 1959. Special recognition was given to several other states during the June, 1959, American Medical Association meeting in Atlantic City, New Jersey. Awards of Merit were presented to the medical societies of Alaska, Arizona, California, Illinois, Indiana, Iowa, Massachusetts, New Jersey, South Carolina, Utah and Virginia. A special award has been prepared to recognize Nevada's leadership during the past several years.

Officers and Board of Directors.—The Board of Directors of the American Medical Education Foundation's meeting, during the Clinical Meeting in Minneapolis in December 1958, unanimously re-elected Dr. George F. Lull, President, Dr. Edward L. Turner, Secretary-Treasurer, and Dr. F. J. L. Blasingame, Vice President. Other members of the Board of Directors also continued in their posts.

National Campaign Committee.—In January 1959, preceding the State Chairmen's conference, an organizational meeting was held of the new National Campaign Committee. This Committee will give direction to the efforts of the state and local committees. In addition, it will attack areas of support that are nation-wide in scope. Dr. Frank B. McGlone of Denver, Colorado, was selected by the Board of Directors as chairman of the new Committee. Dr. McGlone had done outstanding organizational work in the development of Colorado's appeal for AMEF. Eight other veteran state chairmen were chosen from regions into which the country had been divided. These committeemen are as follows: Dr. J. K. Burton, Boise, Idaho; Dr. Jack Q. Cleveland, Coral Gables, Florida; Dr. W. G. H. Dobbs, Torrington, Conn.; Dr. James E. Fitzgerald, Washington, D. C.; Dr. Wilbur E. Flannery, New Castle, Pa.; Dr. W. E. G. Lancaster, Fargo, North Dakota; Dr. James P. Murphy, St. Louis; and Dr. Carlo J. Tripoli, New Orleans.

This Committee met again in June, in Atlantic City, where plans for the fall campaign and some of the problems of AMEF's appeals were attacked. One of the ideas strongly recommended by this Committee was the exploration of a regional approach to the AMEF program, using regional meetings to stimulate interest and effort for medical school support. This Committee recommended to the Board of Directors that such a regional meeting be held in the fall as an experiment.

State Chairmen's Meeting.—The eighth annual State Chairmen's meeting was held January 24 and 25, 1959, at the Palmer House in Chicago. This meeting was the most successful yet held. More than 70 representatives from the 48 states and the District of Columbia were present. State Chairmen and state advisory members were addressed at the opening session by Dr. George Lull, President of the Foundation, Mrs. E. Arthur Underwood, President of the Woman's Auxiliary, Dr. Gunnar Gundersen, then President of the American Medical Association, and Dr. Hugh H. Hussey, Dean of the Georgetown University School of Medicine, a member of the American Medical Association Board of Trustees and the AMEF Board of Directors. Again the State Chairmen's meeting proved particularly helpful to those attending through the open exchange of ideas and methods.

AMEF Alumni Relations.—During the year several steps were taken which indicate increased cooperation between AMEF and the alumni programs of the medical schools. Of these the most important seems to be the increased interest shown by several schools in cooperative programs of the "Georgetown" type. Discussions were held with alumni officials of the Yale University School of Medicine, Louisiana State University School of Medicine, George Washington University School of Medicine and Howard University College of Medicine. In addition, interest was expressed in similar programs by the University of North Carolina School of Medicine, Duke University School of Medicine, Emory University School of Medicine and Georgia College of Ed. Medicine and Surgery. Active participation in a cooperative program began in the early fall as the University of Texas Medical School at Galveston adopted the "Georgetown Plan". Special literature was prepared by AMEF and forwarded to the school.

Physicians direct contributions to medical schools by restriction 1958

Restriction	Amount of Contributions	No. of Contributions
Unrestricted	$1,601,987.21	38,561
For Teaching Budget	39,312.32	1,050
For Specific Department	89,458.17	1,449
For Building Fund	854,552.71	6,692
For Research	78,273.23	699
For Scholarship and Student Aid	109,178.90	2,043
For Library	9,003.81	227
For Endowment	147,771.51	1,629
Others	104,867.67	2,896
Totals	$3,034,405.53	55,246
AMEF total distributed	$1,133,258.00	49,730
Total Physician Giving to Medical Education, 1958	$4,154,450.53	104,976

Direct Contributions.—Following is a table showing Physicians' Direct Contributions to Medical Schools by Restriction. Although the American Medical Education Foundation has been continuously concerned with the unrestricted gifts to medical schools, it receives reports from the schools of all physicians' gifts. It is significant that there was a substantial increase in unrestricted gifts made direct. 1957's unrestricted total was $1,467,098 compared to the figure of $1,601,987 shown on the table.

Woman's Auxiliary Activities on Behalf of AMEF.—It is again a pleasure to report a sizeable increase in contributions to AMEF by members of the Woman's Auxiliary to the American Medical Association, reflecting the Auxiliary's continued and ever-growing interest in the needs of the nation's medical schools. During the year 1958-1959, ending June 30, Auxiliary gifts increased to $140,500 from the previous year's $126,616. Special recognition for this important part of the year's AMEF total figure must necessarily go to Mrs. E. Arthur Underwood, President of the Woman's Auxiliary to the American Medical Association, who again made AMEF one of the priority projects of the Auxiliary; and to Mrs. Karl F. Ritter, National AMEF Chairman, serving for the second year, for her untiring efforts on behalf of the nation's medical schools. Additional thanks are also extended to the four regional chairmen, to all state chairmen, and to the hundreds of county chairmen, who through their guidance and their many ingenious efforts, have made this AMEF-Auxiliary year so successful.

Among the many fund-raising ideas used by the Woman's Auxiliary to benefit AMEF this season was the continued promotion of the "Evening at Home" project whereby Auxiliary members again sold tickets to physicians allowing them to spend a quiet evening in their own living rooms. An increased use of the Sympathy, In Appreciation, and Utility cards once more proved to be an easy and distinctively correct way to help AMEF. Auctions, bridge parties, white elephant sales, handmade articles, dances, and even the selling of tickets for boat excursions were among the other means used to raise money for the nation's medical schools.

New portfolios were designed as working tools for Auxiliary-AMEF Chairmen. Included in these kits, which were sent to all state and county chairmen, were three new pieces: a flyer describing how Christmas cards for AMEF could be made by obtaining a newly-designed printing plate from the AMEF office, a folder of questions and answers about the Foundation called, "Thoughts About A.M.E.F.", promoting the use of the Sympathy, Utility and In Appreciation cards. A revised list of money-making suggestions was also included among the usual thank you notes, samples of AMEF cards and other promotional materials.

Program Activity.—In the twelve month period covered by this report, AMEF staff members have visited nearly every state in an effort to further the state programs and aid the chairmen in their work. Promotional material has been prepared in large quantity and forwarded to the state committees so that each local AMEF committeeman is supplied with data and information on the Foundation. In the field of metropolitan campaigns, a program known as the "Minneapolis Plan" was developed to great success in the fall of 1958. This program utilizes hospital staff affiliations and meetings. During the trial in Minneapolis, Minnesota, each physician in the Hennepin County Medical Society received two letters previous to the campaign month and then, during that month, heard speakers during a brief portion of the monthly staff meeting at each of those hospitals with which he had affiliation. The program has been adopted in several other large metropolitan areas.

The most successful new program of the year is one labeled the "Arizona Plan". Through this program, druggists and others in local medically-allied business are encouraged to make contributions to the Foundation in honor of physicians to whom they have been in the habit of giving Christmas gifts. To date the medical societies of four states have officially approved and adopted the program and action toward this end is under way in at least a half dozen others. Several hundred copies of a formal presentation of the program have been mailed to AMEF officers in nearly every state. It is expected that, within a year, this program will show significant results in the Foundation's annual total.

The annual year-end mailing to the entire profession resulted in a return of over $63,000. Another successful innovation was the inclusion, in the November 1958 issue of the Journal of the New England Medical Association, of an editorial and return envelope requesting a contribution. This was the first time such an approach had been utilized and proved most successful as several thousand dollars were returned in the "tipped-in" envelopes. With this as a precedent, the Journal of the American Medical Association used a similar envelope together with an advertisement in its pages in the December 21 issue. The New England Journal has a circulation second only to J. A. M. A., so that, by their leadership, the two publications were able to effect a nearly perfect coverage of the physician population.

A monthly news letter entitled, "The Foundation," was begun in the fall of 1958 and has now reached a circulation of over 2000. Included in each issue are stories of AMEF activities, a monthly progress report and other pertinent information.

An announcement was made during the year of a program at the University of South Carolina Medical Department whereby faculty members contribute portions of their income above an established ceiling. The plan resulted in a $26,000 increase of the South Carolina state total and has generated interest in many other schools.

Several new folders were developed in the fall of 1958 to be used by state societies in their campaigns. More than twenty-five states requested these folders by the thousands. The fall mailing, previously mentioned, included a Progress Report that combined the 1957 Annual Report with an appeal to the physician for support and a letter sent by the President of the American Medical Association. This Progress Report has been used as the keystone of most of the promotional materials distributed by the Foundation.

Appreciation.—As in previous years, the Board of Directors of AMEF offers its thanks and appreciation to the members of the House of Delegates, Trustees and Officers of the American Medical Association for their assistance and support, for individual gifts and the administrative and operating funds necessary to carry on the work of the Foundation. Expressions of appreciation are also offered to the many state and county journals, bulletins and newsletters which have so generously contributed their space to the Foundation. Special thanks are due to the Editor and staff of *The Journal of the American Medical Association* for advertising space and the presentation of editorial material during the year. *Modern Medicine* and *Medical Economics* have also offered their columns to AMEF.

The Board of Directors of the American Medical Education Foundation expresses its sincere appreciation to all of those who have had a part in the outstanding success of AMEF during 1958, and the equally gratifying start for 1959. Included in this large group are all those state and local chairmen who have given so graciously of both their time and money, the Advisory Members who have contributed their experience, the members of State Committees for their unflagging efforts in our behalf, the members of the Woman's Auxiliary whose resourcefulness and hard work have kept pace with the increasing needs of medical education, and most importantly, the nearly 50,000 physicians whose generosity has helped to ease the financial burdens of medical education.

Respectfully submitted,

George F. Lull, M.D., *President*
F. J. L. Blasingame, M.D., *Vice-President*
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COUNCIL ON INDUSTRIAL HEALTH

The following report has been prepared by the Committee on Industrial Ophthalmology of the Council on Industrial Health. B. Dixon Holland, M.D., *Secretary.*

THE USE OF TINTED LENSES IN NIGHT DRIVING

The Committee on Industrial Ophthalmology of the Council on Industrial Health receives many inquiries concerning the use of tinted lenses and tinted windshields for the reduction of glare in night driving.

The Committee condemns the use of tinted lenses and tinted windshields as aids in night driving. Its opinion may be summarized in the following statements:

1. The use of any "night-driving" lens or windshield, whether tinted, reflecting, or polarizing, reduces the light transmitted to the eye and renders the task of seeing at night more difficult.
2. The source of glare in night driving is the contrast between the headlights of oncoming cars and the darker surroundings. The use of tinted lenses or windshields does not reduce the contrast but reduces the intensity of illumination from both the headlights and the surroundings, thereby impairing vision.
3. There is no scientific evidence to support any claim that the use of tinted lenses or windshields improves night vision.

The members of the Committee on Industrial Ophthalmology are Drs. Edmund B. Spaeth, Chairman, Philadelphia; Franklin M. Foote, New York; Ralph S. McLaughlin, Laconia, N. H.; Joseph F. Novak, Pittsburgh; Ralph W. Ryan, Morgantown, W. Va.; and Benjamin J. Wolpaw, Cleveland.

GOVERNMENT SERVICES

AIR FORCE

Appointment of Medical Officers.—For the last two years, applications for appointment in the regular Air Force submitted by physicians who graduated from medical school in 1955 have been returned to the applicant without action. This was done because of an established limitation on the number of physicians to be appointed in the regular Air Force in any one promotion list service group. The promotion list service group in which a physician is placed in the regular Air Force is determined by his date of graduation. The situation has been restudied. Applications from any eligible physician now will be given full consideration. This is of special interest to reserve medical officers who graduated from medical school in 1955 or 1956 and whose previous applications were not favorably considered because of a lack of, or a limited number of, vacancies. Air Force regulation 36-21, dated April 29, 1959, sets forth the criteria for the appointment of physicians in the regular Air Force.

Consultants Visit Medical Installations.—Drs. Donald S. Rose, Sheldon C. Siegel, and Louis J. West, consultants to the surgeon general, visited Air Force medical installations in Korea, Japan, Okinawa, Philippine Islands, and Taiwan. Dr. Rose is professor of physical medicine at the University of Kansas Medical Center; Dr. Siegel, of the Children's Medical Group in Los Angeles, is a consultant in pediatrics; and Dr. West is head of the department of psychiatry, neurology, and behavioral sciences, University of Oklahoma Medical Center.

Personal.—Col. Aubrey L. Jennings, U. S. A. F., M. C., became director of professional services, office of the surgeon general, U. S. A. F., in August, replacing Brig. Gen. Victor A. Byrnes who retired.

ARMY

History of Internal Medicine in World War II.—Compilation of the history of the Army Medical Service's role in internal medicine during World War II will be directed by a board of 15 prominent civilian physicians and two military doctors, serving *ex officio.* Dr. Garfield G. Duncan, of Jefferson Medical College of Philadelphia, heads the advisory editorial board recently reestablished by the surgeon general. Under the editorial direction of Dr. W. Paul Havens Jr. of the same institution, the board will appraise and revise existing material and include any new material relevant to the history of internal medicine during World War II. Other members of the board include Drs. Walter Bauer, Herrman L. Blumgart, Worth B. Daniels, Eugene C. Eppinger, Joseph M. Hayman, Yale Kneeland, Howard P. Lewis, Esmond R. Long, Perrin H. Long, William Middleton, Donald M. Pillsbury, Maurice C. Pincoffs, and Henry M. Thomas Jr. The *ex officio* members are Col. Dan Crozier, M. C., chief medical consultant, Army surgeon general's office, and Col. John Boyd Coates Jr., M. C., chief of the U. S. Army medical service historical unit, Walter Reed Army Medical Center, Washington, D. C.

NAVY

Retirements.—Capt. Howard K. Sessions, director of the bureau of medicine and surgery's preventive medicine division for the past four years, was retired from the Navy Sept. 1, 1959, after completing more than 28 years active service.——Capt. Otto C. Baumgarten was retired after 20 years active service. His last assignment was at the Naval Air Station, North Island, San Diego, Calif.——Capt. Clement D. Burroughs was retired after 21 years active service. He last served at the U. S. Naval Hospital, Corpus Christi, Texas.——Capt. DeSales G. DuVigneaud was retired after 20 years active service. He was last assigned at the Naval Hospital, San Diego, Calif.——Capt. Albert G. Gibbs was retired at the Naval Amphibious Base, Little Creek, Va. ——Capt. Rexel Goodman was retired at the Naval Ammunition Depot, McAlester, Okla.——Capt. Carroll P. Hungate was retired after 21 years active service. He was last assigned at the Naval Air Station, Glenview, Ill.——Capt. Edgar Ricen was retired after 27 years active service. He was last assigned at the Naval Hospital, San Diego, Calif. ——Capt. Jesse F. Richardson was retired after 21 years active service. His last assignment was the Naval Hospital, St. Albans, L. I., N. Y.——Capt. Norman L. Barr, one of the Navy's leading authorities on space medicine and until recently the director of the bureau of medicine and surgery's astronautical division, was retired after 21 years active service.

Hearing-Conservation Program.—The noise of jet planes on carriers has been a source of increasing concern in recent years and has given rise to an organized hearing conservation program. Basic to such a program is the need to know more concerning hearing losses in persons exposed to noise of high intensity. For this reason the hearing conservation program calls for a systematic audiometry program. The medical officers on board our modern carriers have another direct interest in this problem, since the ambient noise level in the examining room on board aircraft carriers does not permit satisfactory auscultation. The need for quiet in the examining room and in the pursuit of a systematic audiometry program has given rise to a request from the USS Forrestal for an audiometric room. Earlier experience on the USS Valley Forge has proved the usefulness of a similar audiometric booth.

Personal.—Capt. Donald R. Childs was transferred from the bureau of medicine and Surgery to the National Naval Medical Center, Bethesda, Md.

PUBLIC HEALTH SERVICE

Study Team Visits Russia.—Six American scientists surveyed the progress of metabolic disease research in the Soviet Union in September. The mission was sponsored by the Public Health Service's National Institute of Arthritis and Metabolic Diseases. The members of the mission were Dr. Floyd S. Daft, director, National Institute of Arthritis and Metabolic Diseases, Bethesda, Md.; Dr. William Castle, professor of medicine and head, department of medicine of Boston City Hospital, Boston; Dr. William H. Sebrell Jr., director, Institute of Nutrition Sciences, School of Public Health and Administrative Medicine of the Faculty of Medicine, Columbia University, New York; Dr. J. Murray Luck, professor, department of biochemistry, Stanford University, Palo Alto, Calif.; Dr. Currier McEwen, associate professor of medicine, New York University College of Medicine, New York; and Dr. Clifford J. Barborka, associate professor of medicine, Northwestern University Medical School, Chicago.

Personal.—Dr. Pearce Bailey, director of the National Institute of Neurological Diseases and Blindness for the past eight years, was made director of the institute's new International Neurological Research Programs. Dr. Richard L. Masland, now assistant director, will succeed Dr. Bailey as director of the institute. In his new post, Dr. Bailey will encourage the international exchange and coordination of scientific knowledge relating to neurological and sensory disorders. He will serve in a liaison capacity with the World Federation of Neurology, an international professional organization with headquarters in Antwerp, Belgium, and as an advisor to the National Institutes of Health on international neurological developments.

FOOD AND DRUG ADMINISTRATION

Personal.—Dr. E. M. K. Geiling, former Frank P. Hixon distinguished service professor of pharmacology at the University of Chicago, was appointed to the scientific staff of the Food and Drug Administration. He will serve as medical officer and head of the pharmacodynamics branch of FDA's division of pharmacology. His responsibilities will include testing and evaluating safety data for new drugs, pesticides, food additives, coal tar colors, and cosmetics.

MEDICAL NEWS

CONNECTICUT

Conference on Iron Therapy.—A special one-day conference, Symposium on Iron Therapy, will be held Oct. 30, presented by the Yale University School of Medicine, New Haven, with the cooperation of Flint, Eaton Company, and Kinney and Company, Inc. The program includes the following:

Introductory Remarks, Dr. Stuart C. Finch, New Haven.
Adult Iron Metabolism, Dr. Charles E. Rath, Jr., Washington, D. C.
Iron Requirements in Childhood, Dr. David H. Clement, New Haven.
Iron Absorption, Dr. Robert B. Chodos, Syracuse, N. Y.
Tissue Iron Metabolism, Dr. Ernest Beutler, Chicago.
Iron Toxicity, Dr. Willard A. Krehl, New Haven.

Panels on iron therapy will be held in the afternoon, with Dr. Finch as moderator. This conference has been planned for internists, pediatricians, obstetricians, and other physicians interested in problems related to iron therapy. Total enrollment will be limited. Only those who have registered in advance will be admitted. For information and registration, write Assistant Dean, Postgraduate Medical Education, Yale University School of Medicine, 333 Cedar St., New Haven 11, Conn.

ILLINOIS

Dr. Schiller Honored.—Dr. Walter Schiller, Evanston, retired Chicago and New York pathologist, originator of the Schiller test for the detection of cancer of the uterus, was honored by the United States Section, International College of Surgeons, at the recent 24th annual congress in Chicago. A certificate of recognition of his outstanding work was presented to him at a luncheon in the Palmer House. Because of illness, the award was received for him by Mrs. Schiller. Dr. Schiller was professor of pathology at the University of Vienna before coming to the United States 20 years ago.

Chicago

Annual Lectureship.—Phi Delta Epsilon Fraternity's 11th annual lectureship will be given this year by Dr. Albert Dorfman, professor of pediatrics, University of Chicago, The School of Medicine, and director of La Rabida Sanitarium. On Nov. 2, 1 p. m., Dr. Dorfman will present "Medical and Biological Implications of Connective Tissue" at the Chicago Medical School's Kling Auditorium, Mt. Sinai Hospital. On Nov. 3, 4 p. m., he will speak on "The Metabolism of Mucopolysaccharides and Disturbances in Gargoylism" at Northwestern University Medical School's Thorne Hall. Dr. Dorfman's final lecture will be held on Nov. 4, 1 p. m., at the University of Illinois College of Medicine in Room 221, DMP Building, when he will present "The Diagnosis and Treatment of Rheumatic Fever."

Exhibit of Medical Books.—Books which laid the foundation for modern day medicine are on display in a new exhibit at the Harper Memorial Library of the University of Chicago. The exhibition was organized in honor of Dr. Morris Fishbein. The "Great Works in Medicine" exhibition ranges from 16th century essays on self medication to Edward Jenner's description of his work in creating the smallpox vaccine. The exhibit is open to the public. Many of the books were presented by Dr. and Mrs. Fishbein to the University of Chicago. Supplementing these books are selections from the Library's other rare medical collections. One of the rarest books represented in the exhibit is that of a 16th century Spanish physician, Michael Servitus. The exhibition is grouped in sections devoted to significant works in anatomy, medicine, obstetrics, pathology, and surgery.

LOUISIANA

Centennial for State University.—Louisiana State University will celebrate its 100th anniversary during the academic year 1959-1960 with a series of events "commemorating the university's accomplishments in scholarship and public service." The centennial observance formally begins on Oct. 22 with a two-day program dedicating the university's 3.5-million-dollar library completed in 1958. Featured programs throughout the school year include a series of banquets and symposiums on commerce and industry, education, law and medicine, science and engineering, and agriculture; four lectures in a humanities series; and an address by U. S. Senator Russell Long of Louisiana at the annual spring honors day convocation in April. Endowed by federal land grants of 1806, 1811, and 1827, LSU was established by the state constitution of 1845 and opened its doors for instruction Jan. 2, 1860, as the Louisiana State Seminary of Learning. The university's greatest period of growth came following a "greater University" movement which began in 1914 with demands for enlarged agricultural facilities. The present campus was completed in 1932.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

Other campuses include the School of Medicine (established in 1931) and an undergraduate liberal arts division (established in 1958) in New Orleans.

MASSACHUSETTS

Laboratories for Mental Research.—A gift of one million dollars from the Joseph P. Kennedy Jr. Memorial Foundation for the establishment of the Joseph P. Kennedy Jr. Laboratories for Research on Mental Retardation at the Massachusetts General Hospital, Boston, was announced. Of this gift one-half will be spent for the construction of these laboratories and the other half will serve as an endowment to provide continuing operating funds. This is the first of the endowed scientific researchships planned under the anniversary program in observance of the 150th birthday of the Massachusetts General Hospital in 1961. The new laboratories will be concerned with the causes, treatment, and prevention of diseases of the brain occurring during infancy and childhood, and will be directed by Dr. Raymond D. Adams, Bullard Professor of Neuropathology, Harvard Medical School.

NEBRASKA

Annual Assembly in Omaha.—The 27th annual assembly of the Omaha Midwestern Clinical Society will be held Nov. 2-5 at the Civic Auditorium, Omaha. The program includes the following guest speakers: Dr. Simon Rodbard, Buffalo; Dr. Louis M. Hellman, Brooklyn; Dr. Sumner S. Cohen, Oak Terrace, Minn.; Dr. David W. Kramer, Philadelphia; Dr. Leo Alexander, Boston; Dr. Roscoe J. Kennedy, Cleveland; Dr. Claude E. Welch, Boston; Dr. William J. Engel, Cleveland; Dr. Claude N. Lambert, Chicago; Dr. John T. Reynolds, Chicago; and Dr. Lawson Wilkins, Baltimore. Three panel discussions are planned: Antibiotics—Complications of Indiscriminate Use, Shock—Resuscitation and First Aid Survival Management, and Common Fractures. A symposium, "This Is What's New," is also planned. Informal discussions, scientific and technical exhibits, and motion pictures are arranged. For information, write Dr. John H. Brush, 1613 Medical Arts Bldg., Omaha 2.

NEW JERSEY

Encephalitis Epidemic.—The number of reported deaths in an epidemic of encephalitis in southern and central New Jersey rose to 18 Sept. 30. Dr. Roscoe P. Kandle, state health commissioner, stated that the epidemic was declining. The New Jersey State Health Department reported 28 suspected cases of eastern equine encephalitis, with one suspected case reported from the northern town of Paramus. The department said five of the total cases were definitely confirmed as encephalitis. Of these, four were fatal.

Physicians Meet in Jersey City.—The 14th regional meeting of the American College of Physicians will be held in Murdoch Hall, Jersey City Medical Center, Jersey City, Nov. 11. The program will be primarily clinical and will be presented by faculty members of the department of medicine, Seton Hall College of Medicine. The program will be moderated by Dr. Harold J. Jeghers, Jersey City, chairman of the department. Eleven papers are scheduled. Dr. Howard P. Lewis, Portland, Ore., president of the college, will be guest speaker at the evening dinner session. For information, write Dr. Louis L. Perkel, 131 Kensington Ave., Jersey City 4, N. J.

NEW YORK

New York City

Award Rehabilitation Fellowship to Colombian Physician.—The awarding of the Bell Greve Memorial Fellowship for Rehabilitation to a physician from Colombia was announced by Dr. George G. Deaver, professor of rehabilitation, College of Medicine and Rehabilitation, New York University–Bellevue Medical Center. The Colombian physician is Dr. Carlos Mora–Mora, of Bogota. Dr. Mora–Mora is currently undertaking postgraduate training in orthopedic surgery at the Georgia Warm Springs Foundation, Warm Springs, Ga. His training under the Bell Greve fellowship will begin July 1, 1960, and will be undertaken at the Institute of Physical Medicine and Rehabilitation, New York University–Bellevue Medical Center. The Bell Greve Foundation was established by the World Rehabilitation Fund in cooperation with the International Society for the Welfare of Cripples to honor the memory of Miss Bell Greve, who served as Secretary General of the International Society for the Welfare of Cripples. The Colombian affiliate of the international society is the Instituto Colombiano de Rehabilitacion para Ninos Invalidos and its national secretary is Mrs. Elvira de Saldarriaga. Since Dr. Howard A. Rusk, director of the Institute of Physical Medicine and Rehabilitation, visited Colombia in 1955, 10 trainees, including physicians, physical therapists, nurses, and brace makers from Colombia have undertaken long-term postgraduate training in rehabilitation at the institute.

OHIO

Visiting Professor.—Loren C. Eiseley, Ph.D., of Philadelphia, will serve this fall as the second visiting professor of the philosophy of science in the University of Cincinnati College of Medicine. Dr. Eiseley, University of Pennsylvania anthropologist, will be at Cincinnati University Oct. 19 through Nov. 5. He will give a series of free public lectures on the general theme, "Man's Quest for Certainty." Arrangements for his visit are being made by Dr. Charles D. Aring, director, department of neurology.

PENNSYLVANIA

Organize Physicians Art Association.—The first exhibition of the newly organized Pennsylvania Physicians Art Association will be shown Oct. 20-23 at the 109th annual session of The Medical Society of the State of Pennsylvania in the Penn-Sheraton Hotel, Pittsburgh, with examples of oils, water colors, drawings, photographs, sculptures, and crafts created by physicians from all sections of the state. Headed by Dr. Lewis M. Johnson, Lancaster, president of the American Physicians Art Association, the group will hold its first organization meeting during the Pittsburgh showing. Temporary officers of the Pennsylvania Physicians Art Association include Dr. Johnson, chairman; and Drs. Harry T. Kessler, David Budin, and Helen Ryan, of Philadelphia; Julius I. Newmark, New Castle; William E. B. Hall, Chambersburg; and Raymond M. Lauer, York.

Philadelphia

Annual Lectureship.—The ninth annual Pemberton Memorial Lectureship, "The Benefits, Limitations and Problems of the Treatment of Rheumatoid Arthritis with Corticosteroids, Gold Salts and Salicylates: Analysis of 10 Years Study," will be given at the Philadelphia County Medical Society Building, Oct. 28, 8:15 p. m., by Dr. Richard H. Freyberg, professor of clinical medicine, Cornell University Medical College, New York City. The lectureship is under the joint sponsorship of the Eastern Pennsylvania chapter of the Arthritis and Rheumatism Foundation, the Philadelphia Rheumatism Society, and the arthritis section of the Philadelphia County Medical Society.

GENERAL

Meeting Cancelled.—The International College of Surgeons announced that the Mid-Atlantic meeting of the United States Section, International College of Surgeons, scheduled to be held at Hot Springs, Va., Nov. 16-18, has been cancelled.

Meeting on Preventive Medicine.—The American College of Preventive Medicine will meet Oct. 21-22 in Atlantic City, N. J. The third annual lectureship on preventive medicine will be given the evening of Oct. 21 by Dr. Thomas Francis Jr., Ann Arbor, Mich., entitled, "Research in Preventive Medicine: Now and Then." Included in the scientific program are the following papers:

Occupational Health—A Challenge for Local Health Departments, Dr. Huntington Williams, Baltimore.
Smoking and Disease, Dr. Abraham M. Lilienfeld, Baltimore.
An Epidemiological View of Mental Disorders, Dr. Ernest M. Gruenberg, New York City.

For information, write Dr. John J. Wright, Secretary-Treasurer, American College of Preventive Medicine, P. O. Box 1267, Chapel Hill, N. C.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States, its territories and possessions in the weeks ended as indicated:

Area	Sept. 19, 1959 Paralytic Type	Sept. 19, 1959 Total Cases	Sept. 20 1958 Total
New England States			
Maine	7	7	..
New Hampshire	..	..	..
Vermont	..	..	..
Massachusetts	12	15	2
Rhode Island	..	1	..
Connecticut	2	2	6
Middle Atlantic States			
New York	26	42	19
New Jersey	6	8	28
Pennsylvania	8	12	11
East North Central States			
Ohio	4	10	46
Indiana	..	5	7
Illinois	11	30	25
Michigan	13	52	129
Wisconsin	..	1	2
West North Central States			
Minnesota	19	23	2
Iowa	5	10	5
Missouri	14	30	17
North Dakota	3	4	5
South Dakota	..	..	..
Nebraska	4	6	4
Kansas	7	11	3
South Atlantic States			
Delaware	2	2	1
Maryland	4	4	2
District of Columbia	1	1	..
Virginia	12	18	5
West Virginia	14	25	17
North Carolina	19	20	5
South Carolina	7	9	1
Georgia	6	6	3
Florida	3	10	12
East South Central States			
Kentucky	4	4	4
Tennessee	15	20	2
Alabama	8	10	1
Mississippi	..	..	4
West South Central States			
Arkansas	16	19	4
Louisiana	3	5	7
Oklahoma	2	2	3
Texas	9	19	23
Mountain States			
Montana	..	..	3
Idaho	..	..	..
Wyoming	..	..	..
Colorado	..	3	1
New Mexico	4	4	2
Arizona	1	4	2
Utah	..	2	..
Nevada	..	..	1
Pacific States			
Washington	24	24	..
Oregon	5	5	3
California	26	30	14
Alaska	..	..	1
Hawaii	..	..	1
Territories and Possessions			
Puerto Rico	..	..	..
Total	326	515	432

Annual Meeting of Industrial Hygiene.—The Industrial Hygiene Foundation will hold its 24th annual meeting at the Mellon Institute, Pittsburgh, Oct. 28-29. The program is arranged for engineering, legal, medical, chemical-toxicological, and management conferences, with a joint engineering-legal conference planned for Oct. 28. Chairmen of the various conferences will be Philip Drinker, Sc.D., Boston; Lawrence A. Coleman, Allied Chemical Corporation; Dr. Adolph G. Kammer, Pittsburgh; Anna M. Baetjer, Sc.D., Baltimore; William P. Yant, Sc.D., Mine Safety Appliances Company; and Dr. Norbert J. Roberts, New York City. Advanced registration is requested. For information and registration, write the Industrial Hygiene Foundation, 4400 Fifth Ave., Pittsburgh 13.

Southeastern Meeting of Physicians.—The American College of Physicians Southeastern Regional Meeting, for Alabama, Florida, Georgia, South Carolina, and Cuba, will be held at the Hotel Columbia, Columbia, S. C., Oct. 30-31. Presiding at the opening session will be Dr. Orlando B. Mayer, Columbia, governor for South Carolina, and Dr. Carlos F. Cardenas, Havana, governor for Cuba. The program includes a total of 20 papers. Honored guest at the meeting will be Dr. Howard P. Lewis, Portland, Ore., president of the college, who will present an address at the banquet Oct. 30, 8 p. m. Entertainment includes golfing and fishing, and a ladies' program is arranged. Registration fee is $10. For information, write the American College of Physicians, 4200 Pine Street, Philadelphia 4.

Meeting of Obstetricians and Gynecologists.—District IV of the American College of Obstetricians and Gynecologists will hold its annual meeting at the Americana Hotel, Bal Harbour, Miami Beach, Fla., Oct. 30-31. The Miami Obstetric and Gynecological Society will be the host. The district comprises the District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia, Puerto Rico, and Virgin Islands. The scientific program will consist of 16 papers and two panels. Dr. William N. Thornton Jr., Charlottesville, Va., chairman of District IV, will call the meeting to order. Dr. Ralph W. Jack, Miami, president of the Florida Medical Association and second vice-president of ACOG, will give the address of welcome. A dinner meeting of the advisory council the evening of Oct. 29, will be preceded by a patio party. For information, write Dr. Thornton at the University of Virginia School of Medicine, Charlottesville, Va.

Cardiology Meeting in Philadelphia.—The eighth interim meeting of the American College of Cardiology will be held Oct. 23-25 at the Benjamin Franklin Hotel, Philadelphia. The scientific program will include 16 fireside conferences the morning of Oct. 23. On Oct. 25, a symposium, "Cardiac Resuscitation," will be moderated by Dr. Osler A. Abbott, Atlanta, Ga., president of the college, and by Dr. Ernest Craige, Chapel Hill, N. C., and a second symposium, "Mechanical Methods of Assistance to the Failing Circulation," will be moderated by Dr. Abbott. Dr. Pierre M. Galletti, Lausanne, Switzerland, will present "Physiologic Principles of Partial Extracorporeal Circulation." For information, write the American College of Cardiology, Empire State Building, 350 Fifth Ave., New York 1.

Meeting on Tropical Medicine in Indianapolis.—The eighth annual meeting of the American Society of Tropical Medicine and Hygiene will be held Oct. 28-31 at the Claypool Hotel, Indianapolis. The scientific program includes 74 papers and participants from Mexico, India, Guatemala, Japan, Korea, Colombia, and Nigeria. Tours of the Indiana University Medical School and the Lilly Research Laboratories are planned for the morning of Oct. 28. The presidential address, by Dr. Lewis W. Hackett, Berkeley, Calif., will follow presentation of the Bailey K. Ashford Award at the annual dinner, Oct. 30, 7 p. m. A motion-picture session and commercial and scientific exhibits are arranged. A ladies' program is planned. For information, write Dr. Rolla B. Hill Jr., 3575 St. Gaudens Rd., Miami 33, Fla., Secretary-Treasurer.

Postgraduate Caribbean Cruise.—New York Medical College, Flower and Fifth Avenue Hospitals, New York City, will sponsor a 15-day postgraduate cruise to the Caribbean in conjunction with its centennial celebration. Dr. Linn J. Boyd, director of the division of graduate studies, states that the cruise will leave New York Feb. 25, 1960, and visit St. Thomas, La Guaira, Curacao, Cristobal, Kingston, and Havana, spending six days in these ports of call and nine days at sea, aboard the S. S. Hanseatic, a vessel owned by the Hamburg Atlantic Line, West Germany. Sessions of three hours held each morning while at sea and during one afternoon will include lectures, clinical pathological conferences, lantern slide projections and films and will comprise 30 hours of instructions. Physicians may be accompanied by their wives. For information, write the Division of Graduate Studies, New York Medical College, Flower and Fifth Avenue Hospitals, Fifth Avenue at 106th Street, New York 29.

CORRECTIONS

Bishydroxycoumarin Toxicity.—On page 2182 of the Aug. 29 issue, right-hand column, the sentence beginning on line 5 should read "Medication at discharge included bishydroxycoumarin, 50 mg. orally every day."

Dr. Littig's Father Was Section Chairman.—The statement in the obituary of Dr. Lawrence V. Littig, Sept. 26, page 447, that he was chairman of the Section on Hospitals of the American Medical Association in 1916-1917 was erroneous. It was Dr. Littig's father, Dr. Lawrence W. Littig, who died in 1918.

EXAMINATIONS AND LICENSURE

EDUCATIONAL COUNCIL FOR FOREIGN MEDICAL GRADUATES, INC.

Educational Council for Foreign Medical Graduates: Stations around the world. March 16, 1960 and Sept. 21, 1960. Exec. Director, Dr. Dean F. Smiley, 1710 Orrington Ave., Evanston, Ill.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: Part I, Various Cities, June 21-22 and Sept. 7-8. Part II, Various Cities, April 19-20. Applications must be received at least six weeks before the date of the examination. Exec. Sec., Dr. John P. Hubbard, 133 South 36th St., Philadelphia.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 21-23, 1960. Sec., Dr. D. G. Gill, State Office Bldg., Montgomery.

Alaska:* On application in Anchorage or Fairbanks. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

Arkansas:* *Examination and Reciprocity.* Little Rock, Nov. 5-6. Sec., Dr. Joe Verser, Harrisburg.

California: *Written.* Sacramento, October 19-22. *Oral.* San Francisco, November 14. *Oral and Clinical.* San Francisco, Nov. 15. Sec., Dr. Louis E. Jones, Room 536, 1020 N Street, Sacramento.

Colorado:* *Examination.* Denver, Dec. 8-9. *Reciprocity.* Denver, Oct. 14. Exec. Sec., Miss Mary M. McConnell, 715 Republic Bldg., 1612 Tremont Place, Denver 2.

Connecticut:* *Examination.* Hartford, Nov. 10-12. Sec. to the Board, Dr. Stanley B. Weld, 160 St. Ronan St., New Haven.

Delaware: *Examination.* Dover, Jan. 12-14. *Endorsement.* Dover, Jan. 21. Sec., Dr. Joseph S. McDaniel, Professional Bldg., Dover.

District of Columbia:* *Examination.* Washington, Dec. 14-15. *Reciprocity.* Washington, Sept. 14. Deputy Director, Mr. Paul Foley, 1740 Massachusetts Ave., Washington 6.

Florida:* *Examination.* Miami Beach, Nov. 22-24. Sec., Dr. Homer L. Pearson, 901 N.W. 17th St., Miami 36.

Guam: *Subject to Call.* Act. Sec., Dr. F. L. Conklin, Agana.

Hawaii: *Examination.* Honolulu, Jan. 11-12. Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

Idaho: *Examination* and *Reciprocity.* Boise, Jan. 11, 12, 13. Exec. Sec., Mr. Armand L. Bird, 364 Sonna Bldg., Boise.

Indiana: *Examination.* Indianapolis, June 1960. *Reciprocity.* Indianapolis, fourth Wednesday of each month. Ex. Sec., Miss Ruth V. Kirk, 538 K. of P. Bldg., Indianapolis.

Kansas:* *Examination and Reciprocity.* Kansas City, Jan. 15-16. Sec., Dr. F. J. Nash, New Brotherhood Bldg., Kansas City.

Kentucky: *Examination.* Frankfort, Dec. 14-15. Asst. Sec., Mrs. Ray Wunderlich, 620 South Third St., Louisville 2.

Louisiana: *Examination and Reciprocity.* New Orleans, Dec. 3-5. Sec., Dr. Edwin H. Lawson, 930 Hibernia Bank Bldg., New Orleans 12.

Maine: *Examination* and *Reciprocity.* Portland, Nov. 10. Sec., Dr. Stephen A. Cobb, Stanford.

Maryland: *Examination.* Baltimore, Dec. 8-11, Sec., Dr. Frank K. Morris, 1211 Cathedral St., Baltimore 1.

Massachusetts: *Examination.* Boston, Jan. 12-15. Sec., Dr. David W. Wallwork, Room 37, State House, Boston.

Michigan:* *Examination.* Lansing, Oct. 26-28. Ex. Sec., Dr. E. C. Swanson, 118 Stevens T. Mason Bldg., Lansing.

Minnesota:* *Examination.* Jackson, June 1960. *Reciprocity.* Jackson, Dec. 7, Sec., Dr. A. L. Gray, Old Capitol, Jackson.

Minnesota:* *Examination and Reciprocity.* St. Paul, Oct. 20-22. Sec., Dr. F. H. Magney, 230 Lowry Medical Arts Bldg., St. Paul 2.

Nebraska:* *Examination.* Omaha, June 13-15, 1960. Dir., Bureau of Examining Boards, Room 1009, State Capitol Bldg., Lincoln 9.

New Jersey: *Examination.* Trenton, Oct. 20-23 and Jan. 19-22. *Reciprocity.* Monthly, Sec., Dr. Royal A. Schaaf, 28 West State St., Trenton.

New Mexico:* *Examination and Reciprocity.* Santa Fe, Nov. 16-17. Sec., Dr. C. Derbyshire, 227 East Palace Ave., Santa Fe.

New York: *Examination.* Albany, Buffalo, New York and Syracuse, Dec. 8-11. Sec., Dr. Stiles D. Ezell, 23 South Pearl St., Albany.

North Dakota: *Examination.* Grand Forks, Jan. 6-8. *Reciprocity.* Grand Forks, Jan. 9. Sec., Dr. C. J. Glaspel, Box 228, Grafton.

Ohio: *Examination.* Columbus, Dec. 15-17. *Endorsement.* Columbus, Oct. 5. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus 15.

Oregon:* *Examination.* Portland, Oct. 22-24. Ex. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland.

Pennsylvania: *Examination.* Philadelphia, January. Sec., Mrs. Margaret G. Steiner, Box 911, Harrisburg.

Texas:* *Examination.* Fort Worth, Dec. 3-5. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth 2.

Utah: *Examination.* Salt Lake City, July 6-8. *Reciprocity.* Salt Lake City, Nov. 17. Director, Mr. Frank E. Lees, 324 State Office Bldg., Salt Lake City 1.

Virginia: *Examination and Reciprocity.* Richmond, Dec. 2-4. Address: Board of Medical Examiners, 631 First St. S. W., Roanoke.

Virgin Islands: *Examination.* Charlotte Amalie, Nov. 12-13. Sec., Dr. Benjamin Nath, Charlotte Amalie, St. Thomas.

Washington:* *Examination.* Seattle, Jan. 11-13. Administrator, Professional Division, Capitol Bldg., Olympia.

West Virginia: *Examination.* Charleston, January. Sec., Dr. Newman H. Dyer, State Office Bldg., No. 3, Charleston 5.

Wisconsin:* *Examination.* Madison, Jan. 14-16. *Reciprocity.* Madison, Oct. 23. Sec., Dr. Thomas W. Tormey, Jr., 1140 State Office Building, 1 West Wilson St., Madison.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: *Examination and Reciprocity.* Juneau, November. Sec., Dr. R. Harrison Leer, Alaska Office Bldg., Juneau.

District of Columbia: *Examination.* Washington, Nov. 23-24. Deputy Director, Mr. Paul Foley, 1740 Massachusetts Ave., Washington 6.

Florida: *Examination.* Gainesville, Nov. 7. Sec., Mr. M. W. Emmel, Box 340, Gainesville.

Kansas: *Examination.* Pittsburg, Nov. 6-7. Sec., Dr. Leon C. Heckert, Kansas State College, Pittsburg.

New Mexico: *Examination.* Santa Fe, Oct. 18, *Reciprocity.* Santa Fe, Oct. 7. Sec., Mrs. M. Cantrell, P. O. Box 1522, Santa Fe.

Rhode Island: *Examination.* Providence, Nov. 18. *Reciprocity.* Providence, Nov. 4. Administrator, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Dakota: *Examination.* Vermillion, Dec. 4-5. Dr. Gregg M. Evans, 310 East 15th St., Yankton.

Washington: *Examination.* Seattle, Jan. 6-7. Sec., Mr. Thomas A. Carter, Capitol Bldg., Olympia.

Wisconsin: *Examination.* Milwaukee, Dec. 5. Sec., Mr. Wm. H. Barber, 621 Ranson St., Ripon.

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*Basic Science Certificate required.

DEATHS

Beach, Channing Elias, Buffalo, N. Y.; University of Buffalo School of Medicine, 1905; died July 22, aged 88.

Braunlin, Carl Gustave, Portsmouth, Ohio; Miami Medical College, Cincinnati, 1909; member of the American Academy of General Practice; past-president of the Hempstead Academy of Medicine; associated with the Portsmouth General Hospital, where he died July 9, aged 75.

Brown, Hadley Cyprian, El Reno, Okla.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; past-president of the Canadian County Medical Society; veteran of World War I; associated with the Park View Hospital, where he died July 14, aged 83.

Bussell, James Alexander Ⓜ Rochelle, Ga.; Atlanta Medical College, 1893; died July 15, aged 86.

Cahill, George Francis Ⓜ New York City; born in New Haven, Conn., Jan. 1, 1890; Yale University School of Medicine, New Haven, 1911; interned at the Bellevue Hospital, where he was later on the staff; resident surgeon at the New York Post-Graduate Medical School and Hospital; at one time on the faculty of the New York Post-Graduate Medical School; since 1955 professor emeritus of urology, for many years professor of urology at the Columbia University College of Physicians and Surgeons, where he joined the faculty in 1917 as an instructor in urology; served as president and trustee of the American Board of Urology; past-president of the Society of Clinical Urology and the American Urological Association; member of the International Society of Urology and in 1952 president of the ninth congress in New York City; member of the American Association of Genito-Urinary Surgeons, Industrial Medical Association, Harvey Society, New York Academy of Medicine, Sigma Rho Sigma, and the New York Urological and Surgical Society; fellow of the American College of Surgeons, of which he was a governor, New York Academy of Sciences, and the American Association for the Advancement of Science; served overseas during World War I; together with Dr. Meyer M. Melicow, received a gold medal for their exhibit on "Tumors of the Adrenal Gland" at the 100th anniversary meeting of the American Medical Association, and the exhibit was awarded first prize by the American Urological Association; in 1948 received the Trimble Medal from the Maryland Medical and Surgical Society; consulting urologist, and from 1946 to 1949 president of the medical board of the Presbyterian Hospital, where for many years he was director of the J. Bentley Squier Urological Clinic, which he helped to build up; from 1946 to 1952 member of the special advisory committee of the Veterans Administration; consulting urologist, Vanderbilt Clinic, New York Orthopedic Dispensary and Hospital in New York City, Tuxedo Memorial Hospital in Tuxedo Park, and the Yonkers (N. Y.) General Hospital; consulting surgeon at the Willard Parker Hospital; served as director of urology at the Francis Delafield Hospital; among his major contributions was his classification of tumors of the adrenals and, with Dr. Marcel Goldenberg, the initiation of a test for pheochromocytoma; in 1956 received an honorary doctor of science degree from Columbia University; died in the Harkness Pavilion of the Columbia Presbyterian Medical Center July 24, aged 69.

Carter, Carl Estes Ⓜ Austin, Texas; Baylor University College of Medicine, Dallas, 1924; member of the American Academy of General Practice; veteran of World War I; associated with the Brackenridge, Seton, St. David's, and Holy Cross hospitals; a director of Texas State Bank; died July 21, aged 73.

Clark, Dwight Edwin Ⓜ Chicago; born in Mount Eaton, Ohio, July 28, 1910; University of Rochester School of Medicine and Dentistry, Rochester, N. Y., 1937; since July, 1958, chairman of the department of surgery, in 1951 appointed professor of surgery, and in 1947 associate professor at the University of Chicago, where from 1937 to 1944 he was a surgical intern, fellow, resident, and instructor in the university clinics; member of the founders group of the American Board of Surgery; member of the American Surgical Association, Society of University Surgeons, Central Society for Clinical Research, American Goiter Association, Society of Experimental Biology and Medicine, American Association of Cancer Research, Chicago Surgical Society, Institute of Medicine of Chicago, Sigma Xi, and Alpha Omega Alpha; fellow and member of the board of governors of the American College of Surgeons; vice-president of the Society of Nuclear Medicine; served in the U. S. Army Medical Corps from 1944 to 1947, assigned to the Manhattan Project, Oak Ridge, Tenn., part of the period as chief of surgery and commanding officer of the corps' hospital at Oak Ridge; his work centered on research and clinical use of radioactive iodine in the treatment of diseases of the thyroid, including cancer; senior attending surgeon and secretary of the department at the Albert Merritt Billings Hospital, where he died July 24, aged 48.

Ⓜ Indicates Member of the American Medical Association.

Cooley, Judson Cassius Ⓜ Sandy Lake, Pa.; Jefferson Medical College of Philadelphia, 1897; died in the Mercer Cottage Hospital in Mercer July 23, aged 86.

Crowell, Isabel, Monrovia, Calif.; University of Southern California School of Medicine, Los Angeles, 1906; served on the staff of the Los Angeles County Hospital in Los Angeles; died in the Alta Vista Hospital in Pasadena July 23, aged 79.

Darnall, Rolland Fulton Ⓜ Little Rock, Ark.; Medical College of Indiana, Indianapolis, 1895; member of the American Psychiatric Association; past-president of the Pulaski County Medical Society; formerly associated with the Arkansas State Hospital for Nervous Diseases; served as medical superintendent of the Salasco Sanitarium School; on the staffs of the St. Vincent Infirmary and Arkansas Baptist Hospital; died July 20, aged 87.

Draughn, Duncan McInnis Ⓜ Moore Haven, Fla.; College of Physicians and Surgeons, Baltimore, 1913; veteran of World War I; died in Arlington, Va., July 16, aged 72.

Dresel, Irmgard Ⓜ Far Hills, N. J.; Ludwig–Maximilians–Universität Medizinische Fakultät, München, Bavaria, Germany, 1920; on the staff of the All Souls Hospital in Morristown, where she died July 23, aged 63.

O'Donoghue, Archibald Fairbairn Ⓜ Sioux City, Iowa; State University of Iowa College of Medicine, Iowa City, 1919; specialist certified by the American Board of Orthopaedic Surgery; member of the Clinical Orthopaedic Society and the American Academy of Orthopaedic Surgeons; fellow of the International College of Surgeons and the American College of Surgeons; member of the staffs of the Methodist, St. Joseph Mercy, and St. Vincent's hospitals; in 1944 received an honorary doctor of science degree from Morningside College; died in the University Hospital, Iowa City, July 26, aged 63.

Pope, Herbert Lee Ⓜ Knoxville, Tenn.; University of Tennessee College of Medicine, Memphis, 1926; member of the American Psychiatric Association; veteran of World War II; associated with the Eastern State Hospital; died in the Fort Sanders Presbyterian Hospital July 14, aged 57.

Sawyer, Edward Keyes, Malden, Mass.; Harvard Medical School, Boston, 1899; died in the Malden Hospital July 22, aged 90.

Schoolfield, Edward Raymond Ⓜ Bucyrus, Ohio; Medical College of Ohio, Cincinnati, 1899; veteran of World War I; on the staff of the Bucyrus City Hospital; died July 18, aged 82.

Schutte, Raymond Grover Ⓜ Kenton, Ohio; Ohio State University College of Medicine, Columbus, 1915; fellow of the International College of Surgeons and the American College of Surgeons; associated with the Hardin Memorial and San Antonio hospitals; veteran of World War I; died at Bass Lake, Interlochen, Mich., July 18, aged 71.

Sharrer, Gerald Leslie Ⓜ Aurora, Ill.; Loyola University School of Medicine, Chicago, 1938; veteran of World War II; interned at St. Francis Hospital in Evanston, Ill.; died July 23, aged 51.

Sheffield, Harry Joseph Ⓜ Frankfort, N. Y.; Syracuse University College of Medicine, 1904; past-president of the Herkimer County Medical Society; served one term as coroner of Herkimer County; retired health officer; associated with the Ilion (N. Y.) Hospital; director of the Citizens Bank; died July 19, aged 79.

Stevens, Harry Harrington Ⓜ Yonkers, N. Y.; Columbia University College of Physicians and Surgeons, New York City, 1905; also a graduate in pharmacy; served as school physician in Tuckahoe; for many years associated with the Lawrence Hospital in Bronxville; died in Knoxville, Tenn., July 18, aged 80.

Tartikoff, George Ⓜ Brooklyn; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1939; specialist certified by the American Board of Obstetrics and Gynecology; instructor of obstetrics and gynecology at the State University of New York Downstate Medical Center College of Medicine; associated with the Maimonides, Coney Island, and Jewish Chronic Disease Hospital; died in the Maimonides Hospital July 22, aged 45.

Thiessen, Edward Herman Ⓜ Kansas City, Mo.; University of Kansas School of Medicine, Kansas City, 1921; member of the executive staff of St. Luke's Hospital; died July 15, aged 63.

Thomas, Luther Allen Ⓜ Painted Post, N. Y.; University of Buffalo School of Medicine, 1906; also a graduate in pharmacy; past-president of the Steuben County Medical Society; associated with the Corning Hospital, where he was president of the board of directors; president of the First National Bank; died in the Corning (N. Y.) Hospital July 18, aged 78.

Thorn, Edwin Charles Ⓜ Greenfield, Mass.; University of Vermont College of Medicine, Burlington, 1933; member of the American Academy of General Practice; served an internship and residency at Stamford (Conn.) Hospital; secretary-treasurer of the Franklin District Medical Society; died July 19, aged 53.

Vance, W. Brooks Ⓜ New York City; University of Nebraska College of Medicine, Omaha, 1923; fellow of the American College of Chest Physicians; associated with Lenox Hill and St. Clare's hospitals; died Aug. 2, aged 60.

FOREIGN LETTERS

FRANCE

International Federation for Medical Electronics.—At the Second International Conference on Medical Electronics in Paris in June the International Federation for Medical Electronics was formed. Its object is to encourage the development and dissemination of knowledge in medical electronics throughout the world. To do this the federation will sponsor international congresses at regular intervals, collect and publish literature, and encourage research in medical electronics. Professor Grashchenkov, vice-president of the World Health Organization, announced that the General Assembly of the United Nations had passed a resolution calling on the secretary general to make plans for an International World Health Year. He also said that medical electronics had already made great strides in diagnosis, therapy, and research.

Space Flight.—At the same meeting, Milton Berkowitz and others stated that to make space flight safe for human travelers it is essential to know what physiological effects will be produced by the launching and subsequent orbiting and return of space vehicles. The first manned space vehicles will therefore contain electronic apparatus for automatically monitoring and transmitting to the ground physiological information on the "pilot's" respiration, blood pressure, and skin temperature from which his body condition and reactions to unusual stresses will be seen immediately. Such information will also be necessary for the future design of space vehicles insofar as it will show what operations the pilot will be able to perform in the special conditions of space flight, as, for example, weightlessness.

Artificial Hearing Aids.—At the same meeting, Dr. André Djourno stated that when the ears of a deaf person are completely insensible to external sounds, even through bone conduction, the only possible way to produce the sensation of hearing is to stimulate the auditory nerves in the brain directly by electrical signals. This entails making delicate electrical connections to the nerve fibers, but it is impractical to have wires trailing from the head for this purpose. The speaker, therefore, has embedded small, sealed pick-up coils inside the deaf person's head, with the wire ends connected to the appropriate nerve fibers. Electrical signals are then transmitted to these coils from outside the head by electromagnetic induction so that it is only necessary for the patient to remain within the influence of a magnetic field. Elementary sensations of hearing have been produced, mainly on the basis of rhythm and pattern.

Muscle Amplifiers.—At the same meeting, L. H. Montgomery and S. E. Stephenson Jr. described a series of muscle potential amplifiers built for such special purposes as control of artificial respiration and timing the beat of the auricles and ventricles. The latter is used as a supportive measure during transient block following cardiac surgery. The final application was that of controlling artificial limbs or prostheses by muscle potentials from the partially paralyzed muscle which in turn is used to operate a valve that controls high pressure compressed gas from a small tank. With the compressed gas used as the primary power the application of this principle is limited only by the skill of the designer of the prosthetic device.

A Swallowable Transmitter.—At the same meeting, Prof. H. B. Sprung described an ingestible but indigestible intestinal transmitter that, in its passage through the intestinal tract, transmits information regarding pressures to which it is subjected, pressures occurring in the course of its simultaneous forward motion, position changes, variations in the pH of the surrounding medium, and temperature variations. Its use indicated that the fundus and corpus of the stomach served for mixing of food but that no measurable pressures were involved in the process. Position recording showed that the mixing of the stomach contents in the fundus was controlled by the motions of the diaphragm whereas the corpus possessed its own specific rhythmic motor activity. Pressures up to 200 cm. H_2O were recorded in the pyloric antrum. The prominent characteristic of small intestinal activity was the multiperiodic pressure variation. Small intestinal motility was regulated by tonus increase. The pressure variations in the large intestine were of the single-period type. Variations in the pH of the upper duodenum were determined by the rhythm of discharges of food from the stomach.

Echo-Encephalography.—At the same meeting, D. Gordon stated that ultrasonic echo techniques have been used for five years to detect displacements and deformities of the brain without subjecting the patient to the risk and delay involved in

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The items in these letters are contributed by regular correspondents in the various foreign countries.

pneumography and angiography. The most constant echo recorded is that of a midline structure believed to be the spectrum pellucidum. By using two transducers on both sides of the skull it is possible to compare the echo patterns from the two sides simultaneously. This permits small deviations from the midline to be demonstrated.

INDIA

Choline Theophyllinate for Edema.—H. N. Singh (*Journal of the Indian Medical Association*, vol. 33, July 16, 1959) stated that a therapeutically effective concentration of theophylline in the blood can be obtained by giving choline theophyllinate by mouth. With this drug injections are not necessary as with theophylline ethylenediamine. Gastrointestinal irritation is not common after oral administration and side-effects are few. The author gave the drug to 28 patients with edema of varying cause. These patients were given an ordinary vegetarian diet with low salt content. Fluids were allowed as desired and choline theophyllinate was given in doses of 200 mg. four times a day.

Its diuretic effect was observed in cardiac patients in the absence of any cardiac glycosides. This effect was marked during the first 24 hours. It then showed a slight diminution and later increased. An average increase of 762 cc. of urine was noticed in the daily urinary output, in the first four days of therapy. There was simultaneous reduction in body weight, with an average of 12 lb. (5.4 kg.) being lost in the first four days. The average fluid intake in these cases was 1,618 cc. and the average urinary output was 2,585 cc. in the first four days. Thus, 967 cc. of fluid was lost per day. The drug could be given for a long period with the maintenance of good diuresis. The results were best in patients with cardiac edema and moderately good in those with edema due to hypoproteinemia. Edema in nephritis and cirrhosis did not respond well to the drug.

Drip Infusion for Anemia.—M. N. Parikh and co-workers (*Journal of Obstetrics and Gynecology of India*, vol. 9, June, 1959) reported encouraging results with intravenous drip infusions containing 1 Gm. of elemental iron in the treatment of iron deficiency anemia during pregnancy. The therapy is of special value in patients who, for different reasons, cannot stay long in the hospital and cannot come repeatedly to the hospital for parenterally administered iron therapy. Patients with hemoglobin values between 4.3 and 7.2 Gm. and who were in the sixth to eighth month of pregnancy were selected for trial after the anemia was proved to be due to iron deficiency. An initial test dose of 2 cc. of a preparation containing 40 mg. of elemental iron was given to exclude sensitivity to iron. After two or three days, a test dose of 5 cc. of the preparation was given. On the next morning an intravenous drip infusion containing 1 Gm. of elemental iron in 1 liter of 5% dextrose solution was started and run in at the rate of 45 to 60 drops per minute, the whole infusion taking six to eight hours to administer. No antihistaminics were required.

The patients were discharged the next day, after another intravenous injection of 100 to 200 mg. of iron in those with severe anemia. The patients were advised to take vitamin B complex and a preparation of protein therapy by mouth. In a series of 15 patients so treated the average hemoglobin level increased from 43.9 to 70.1% in an average period of 27 days. The clinical improvement was equally striking. No serious reactions occurred. The intravenous drip infusion of iron in dextrose solution was continued in spite of epigastric discomfort and vomiting, if this was unaccompanied by any other symptoms or change in pulse and blood pressure. These changes usually appeared only after 700 mg. of elemental iron was administered.

Although it was intended to give 1 Gm. of iron to all the patients, four patients received less than this amount, as one patient developed vomiting, two refused to have the infusion for such a long time, and one developed hunger contractions and insisted on sitting up for lunch. Patients were encouraged to drink milk at regular intervals during the infusion to allay hunger. An intramuscular injection of 15 mg. of morphine helped to reduce the discomfort of lying down in one position without moving the arm for a prolonged period. Megaloblastic anemia is a contraindication for intravenous iron therapy. Two patients with such a condition who received this therapy registered a continuous fall in the hemoglobin level after the injection. The presence of a hypoplastic bone marrow is also probably a contraindication to this therapy.

Leprosy.—A survey conducted by the Mines' Board of Health, Asansol, showed an alarming increase in the incidence of leprosy in this area. The number of people found to be suffering from this disease was 5,285, of whom 1,068 were in a highly infective state. About 1% of school boys was found to be suffering from the disease. The incidence among miners was 0.4%. Since the survey was incomplete it was believed that the number of lepers in this subdivision must be more than 15,000. The disease is spreading due to inadequacy of facilities for segregation and treatment.

Formation of Urinary Calculi.—P. Das (*Journal of the Indian Medical Association*, vol. 33, July 1, 1959) placed a sterile round piece of zinc, 3 mm. in diameter, in the urinary bladders of 53 rats through a suprapubic cystostomy after which the bladder was closed. The animals were fed a diet of wheat, milk, and green vegetables; a diet which is not conducive to stone formation. Rats were killed at the rate of 1 a day for three weeks after the operation and then the remaining 32 were killed. The sequence of events in the formation of these stones as observed in the second group showed that first the foreign body got attached to the bladder wall and a raised white speck formed at the site of attachment. By the fourth day, the foreign body along with this speck got detached and was found free in the bladder. A thin layer of mucus was deposited on the foreign body. It then gradually became covered with stone material and grew larger. By the 10th day it was thus completely covered, while small masses of mucoid material were occasionally seen partially covering the stone.

Secondary stones were noted after the 10th day. The amount of stone formed around the foreign body in the group of 32 varied, the smallest stone weighing 18.8 and the largest 161 mg.; 19 also showed secondary stones which were usually smaller than the original stone and most of them appeared to be a mass of crystals. Their number varied from 1 to 18 in a single animal. Six rats showed a gelatinous mucoid material or coagulum adherent to the original stone. Microscopic examination of the raised white speck showed inflammatory cells and a cellular homogeneous exudate. Calcium granules were demonstrated in this intercellular substance in one animal. The white speck was shown to contain polysaccharides and imbibed calcium in its substance. The coagulum was a hyaline structureless acellular mass containing many clear spaces (probably coagulated mucin). No calcium could be demonstrated. Flattened epithelial cells covered its surface in spots. The coagulum could have formed from the mucosa of the bladder, from the colloids of urine, or both. It probably acted as a layer of organic matter on which the crystalloids were deposited.

In a third group of rats, the coagulum obtained from the rats in the first experiment was placed in the bladder and the animals were killed a week or two later. In some rats stone formation was noticed to have occurred in relation to the coagulum while in others, the coagulum had shrunk and crystals of stone material had deposited on its surface. The author concluded that the presence of a foreign body in the bladder initiates certain processes leading to the formation of stone. It not only acts as a nucleus for deposition of stone material but also starts the production of coagulum, precipitation of crystals, and formation of secondary stones.

SWEDEN

Prostaglandin.—Prostaglandin is defined as the lipid soluble smooth muscle-stimulating and blood pressure–lowering factor with acidic properties in seminal fluid and in extracts of some accessory genital glands. Rune Eliasson (*Acta physiol. scandinav.* [supp. 158] 46:1-73, 1959) stated that the prostaglandin present in seminal fluid from man was secreted exclusively from seminal vesicles. There appear to be three possible physiological functions of prostaglandin. It may (1) act as a chemical stimulator inducing the emptying of the accessory genital glands, (2) be of importance for the motility of the spermatozoa, and (3) facilitate the migration of spermatozoa in the female genital tract.

Phenmetrazine for Obesity.—R. W. Ettlinger (*Opusc. med.* 4:175-178, 1959) stated that many patients treated for obesity with phenmetrazine had become manic. It had also produced addiction. The author concluded that as the drug was so dangerous from the psychiatric point of view it was gratifying that it had officially been classed as a narcotic.

Anemia in Chronic Nephropathies.—The anemia in chronic glomerulonephritis and nephrosclerosis can partly be explained by a depressed erythropoiesis. The anemia and the depressed erythropoiesis are well correlated to the duration of the impairment of the kidney and less well to the degree of the azotemia. No hemolytic signs have been proved. In a nephrotic kidney the above-mentioned correlation does not exist. A hemolytic erythropoiesis is more common. N. G. Nordenson (*Opusc. med.* 4:212-220, 1959) investigated 104 patients with chronic glomerulonephritis and nephrosclerosis, of whom 78 had anemia and 87 had hypoplastic erythropoiesis. None had hemolytic erythropoiesis. Of 11 patients with nephrosis, 8 had anemia, 3 had hypoplastic erythropoiesis, 3 had normal or hyperplastic erythropoiesis, and 5 had a morphologic, hemolytic erythropoiesis. Of seven with chronic interstitial nephritis, six had anemia, one had hypoplastic erythropoiesis, two had normal or hyperplastic erythropoiesis, and four had hemolytic erythropoiesis. The cause of the depressed erythropoiesis is still in doubt. Probably there is lack of specific hemopoietins in chronic nephropathies. In acetophenetidin poisoning with kidney damage the etiological problems are simpler. The treatment of the hypochromic anemia with a combination of iron, copper, and cobalt is probably of value in these patients.

Silicon in Tissues.—Sigfrid Fregert (*Acta dermat. venereol.* [supp. 42] 39:1-92, 1959) determined the amount of silicon in human epidermis, dermis, nail, and hair. The tissues were obtained from cadavers aged one day to 87 years without any evidence of skin disease and from surgical specimens. Scales from patients with psoriasis, exfoliative dermatitis, and ichthyosis were also analyzed. The mean value of the silicon content of epidermis was found to be 106 mcg., of whole skin 23 mcg., of female dermis 18 mcg., of male dermis with strong growth of hair 25 mcg., of hair 90 mcg., and of nail 56 mcg., per gram of dry tissue. About 50% of the epidermal silicon was found in the cornified layer. About 70% of the total silicon content of the cornified layer but no more than 6% of that of the noncornified layer was alkali-insoluble.

Dry scales from patients with psoriasis contained, on the average, 45 mcg. of silicon dioxide per gram. On an average, 23% of the silicon was alkali-insoluble. Dry scales from patients with exfoliative dermatitis contained 23 to 55 mcg. per gram, and 18 to 36% of this silicon was alkali-insoluble. Dry ichthyotic scales contained 260 to 594 mcg. per gram, and 55 to 79% was alkali-insoluble. The author commented that as there was a large accumulation of silicon in the alkali-insoluble component, the silicon probably formed an essential part of this fraction. It was postulated that silicon might combine by cross-linking with keratins, forming an alkali-insoluble component of cornified structure. In this way it might contribute to the solidity and chemical resistance of these structures which form a barrier of absorption. The fact that the silicon content was lower than normal in pathological epidermis with incomplete keratinization but higher than normal in pathological epidermis with superkeratinization also indicated its role in the keratinization process.

Prevention of Chronic Acetophenetidin Poisoning.—According to Dr. Siegwan (*Svenska läkartidningen*, June 18, 1959) many patients with chronic pyelonephritis will, when closely questioned, admit that they have been taking acetophenetidin over a long period. In Sweden it is exceptional for this drug to be taken alone, but there are about 30 preparations containing it, most of them requiring a doctor's prescription. Those preparations in which the sale is unrestricted constitute a danger to the public health. After consultation with Dr. Siegwan one pharmaceutical firm withdrew the acetophenetidin from Sedyl and Sedisonal, replacing it with N-acetyl-p-amino-phenol. The tablets thus modified and known as Sedyl-napa and Sedisonal-napa, respectively, have now been tested on 42 patients suffering from such ailments as chronic polyarthritis, lumbago, and sciatica. In 36 of these patients the analgesic effect of the napa drugs was equal to that of the acetophenetidin compound. In two it was greater, and in four it was less. No toxic effects of any importance were observed, but two patients complained of slight abdominal discomfort.

Congenital Cardiac Disease.—Increasing facility in the treatment of congenital heart disease associated with elevated pressure in the pulmonary artery has intensified interest in concomitant changes in the pulmonary vessels. In order to judge whether closure of a ventricular septal defect or a patent ductus arteriosus in a given patient would lead to improvement, or might have a deleterious effect, F. Therkelsen and co-workers (*Acta chir. scandinav.* 117:174-180, 1959) reported a series of operations performed on 12 infants with patent ductus arteriosus and 18 with ventricular septal defects. In most of the latter group the method of Dammann-Muller was used, but in some patients open-heart surgery was performed. The only changes which seemed definitely specific for ventricular septal defect were intimal proliferations, which might also be regarded as irreversible.

In some patients with patent ductus arteriosus muscular hypertrophy was seen and nearly always there was hyperplasia of the elastic tissue. These investigations suggested that the correlation between vascular changes and pulmonary hypertension and shunt in congenital heart disease was not always certain. The authors could not exclude the possibility that elevated pulmonary artery pressure might in some patients be caused solely by the abnormally large flow. This problem is of special interest, if vascular changes are to be used as a guide to the advisability of operation in such patients.

"Community" Type Hospital for Mental Patients.—An 800-bed hospital for the care of mental patients built along entirely new lines was recently inaugurated by King Gustaf Adolf at Gullberna in southern Sweden. Five similar hospitals will be built within the next few years. On a peninsula on the Baltic Sea, in the district called "the Garden of Sweden," an area of about 125 acres has been transformed into a small ordinary community without bars and barriers. The hospital pavilions are located in the idyllic park and there is a community center with stores, cafeterias, barber shops, and a theater. It gives the impression of a small modern community or a tourist resort. As part of the therapy patients work in the hospital gardens and in different types of workshops. There are hobby rooms and a library. There is also opportunity for swimming and other outdoor activities. The impression of an ordinary community is emphasized by the fact that the patients do not wear hospital uniforms. Both men and women patients are accommodated in 12 pavilions, most of which are two-story houses. No ward has more than six beds. Each department has a dining room and a sitting room of its own where visitors can be received. There are no long, depressing corridors, and the furnishings as well as the walls are in light and gray hues. The staff consists of 7 doctors, 320 nurses and attendants, and 72 other employees, or one staff member for every two patients.

Why Strict Dieting for Diabetes?—Dr. S. Johnsson (*Nordisk medicin*, June 25, 1959) presented statistics indicating that the risk of renal and retinal complications in diabetics may be reduced by strict adherence to an appropriate diet. His series consisted of 54 patients who developed diabetes before the age of 40 between 1922 and 1935, and 105 similar patients from the period 1936 to 1945. During the first of these periods dieting was strictly enforced with a view to keeping glycosuria below a certain level. After 1936 these precautions were progressively relaxed, with the patients being on a comparatively normal diet as long as they were free of glycosuria. Involvement of the kidneys was seven times more frequent in the second than in the first period. Involvement of the retina was also more frequent in the second period. Insulin coma and other insulin mishaps were more frequent in the first period, but they seem to have had no part in the provocation of the late complications of diabetes. It is justifiable when necessary to raise the insulin dose from once to twice a day, and among the eight patients in the first period with a record of more than 20 insulin comas not one showed evidence of renal disease.

UNITED KINGDOM

Environmental Hazards of Pregnancy.—At the 15th British Congress of Obstetrics and Gynecology in Cardiff in July, Dr. Alice Stewart described the results of studies she had made on the effect of manual work during pregnancy. From a survey of 4,000 pregnancies of women in Northampton she found that attempts to combine housework with paid manual employment are likely to increase the risk of premature birth and consequently of stillbirths and neonatal deaths. Other factors being equal, fetal death is more likely to occur if a mother is obese and short than if she is tall and thin.

Neonatal Asphyxia.—At the same meeting, Dr. M. S. Fraser reported on a series of 100 children 6 to 11 years of age who had had asphyxia at birth and 100 matched controls who had had a normal birth. A definite association was observed between the occurrence of asphyxia at birth and the subsequent development of epilepsy and myoclonic seizures. Those with asphyxia at birth were slightly less dexterous and more clumsy in finely coordinated movements of the limbs than the controls. There were slight but definite personality defects in the groups with asphyxia.

Handicaps of Prematurity.—At the same meeting, Dr. C. M. Drillien stated that her investigations did not confirm the generally held view that premature infants eventually catch up. A series of 600 premature infants was followed up and their mental and physical status compared with that of children of the same age who were of normal weight at birth. By 6 years of age the prematurely born had not caught up to normal weight. All the milestones of infancy occurred later in the prematurely born. Their I. Q. and mental development were lower than those of children of normal birth weight. Only 7% of the prematurely born had a normal or above normal I. Q., 49% were dull and needed special schools, and 14% had an I. Q. below 70 and were incapable of being educated. Other factors, such as social status, were involved. The prematurely born more commonly came from the poorer families, where the environment was not conducive to good mental or physical development. Undoubtedly environment played a part in development. Dr. Drillien stated that the prematurely born with the lowest birth weight had the highest incidence of physical and mental handicaps later in life.

The incidence of illness, particularly involving the respiratory tract, was greater among the prematurely born, and a high proportion had visual defects, particularly myopia. Emotional disorders, which were found to be more common than in normal children, were present in 33% of them. These could, however, be due partly to an overprotective attitude of the parents. Emotional instability was likely to be a great handicap later in their lives.

Estrogen Assays.—At the same meeting, Prof. Robert Kellar described the work that his group had done on the correlation of urinary estrogen excretion with certain gynecologic and obstetric conditions. The estrogen fractions assayed were estriol, estrone, and estradiol-17. Postmenopausal women, women with amenorrhea who had an inactive endometrium, patients exhibiting anovulatory cycles, and some with cystic glandular hyperplasia showed a more or less constant level of total urinary estrogen excretion, fluctuating between 7 and 30 mcg. in 24 hours. This was in contrast to the normally menstruating woman, who showed a resting minimum of 12.5 mcg. rising to a follicular maximum of 57 mcg. at ovulation, and a luteal maximum of 22 mcg. between the 20th and the 24th day of the menstrual cycle. Patients with ovulatory cycles and a few who had cystic glandular hyperplasia showed marked periodic fluctuations in estrogen excretion. In all conditions a direct correlation was found between the histological state of the endometrium, the vaginal smear, and the level of urinary estrogens.

A gradual rise in urinary estrogen was observed in pregnancy increasing from an average of 5 mcg. in 24 hours to a maximum of 35 mcg. just before term. In twin pregnancy the value was more than doubled, but in patients with gestoses the values were much lower than normal. Prof. B. ten Berge, of Amsterdam, showed how the fall in urinary estrogen excretion could be of diagnostic help during pregnancy. When the estradiol excretion falls below 10 mcg. daily in a toxemic patient he induces labor. At values below this the fetus is likely to die.

CORRESPONDENCE

THE HOSPITAL SHIP "CONSOLATION"

To the Editor:—Having spent seven years in the Orient, most of that time on the staff of a struggling union medical college in China, I hasten to agree with Dr. Karl M. Bowman and Dr. Francis S. Smyth (*J. A. M. A.* 170:2130 [Aug. 22]) concerning the most efficient way to invest American dollars for medical work overseas. Namely, I share their concern over the wisdom of spending $3,500,000 to send the hospital ship "Consolation" to Southeast Asia. This tremendous sum of money judiciously invested through any of the well-recognized channels for overseas medical work would almost certainly do more lasting and long-term good than the hospital ship extravaganza.

In addition to the China Medical Board and the Rockefeller Foundation mentioned by Dr. Smyth, there are numerous other thoroughly competent and experienced groups and persons whose help would insure the wise investment of American dollars overseas. Most of us are eager to do all we can to help less fortunate people overseas. However, we are also eager to have our efforts be far reaching and efficient.

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WHAT IS AN "INTERNIST"?

To the Editor:—The internist is the only specialist in the realm of medicine who must continually attempt to define and/or describe the function of his specialty. This is true, as evidenced in the editorial by Dr. Paul S. Rhoads in the *Archives of Internal Medicine*, October, 1958, page 515, as well as in the editorial by Dr. Arthur L. Bloomfield in The Journal, April 4, 1959, page 1628. Further evidence that we are unable to define our own specialty is brought out by the brochure of the Society of Internal Medicine. We as internists are at the crossroads of survival as a specialty and as a distinct entity. The public does not need an explanation as to the function of a surgeon, an obstetrician, or an ophthalmologist; it knows the function of the general practitioner who has over the years justifiably enhanced his stature in the medical profession and in the eyes of the layman. Our fees as internists are open to censure, and in many respects the so-called high cost of medical care falls on the shoulders of the internist because of the ignorance evidenced by our patients concerning our capabilities and our special training.

Assuming then that the term "internist" remains an enigma even after 23 years and that we are still making efforts to define it, would it not be wise to face the issue and change the name of our specialty? Without doubt the one word most frequently used to describe ourselves to our lay friends is "diagnostician." Everyone knows that term and remembers that the diagnostician was the specialist called on when knowledge was needed to help unravel a medical problem. Why then was this term glossed over when the American Board of Internal Medicine was incorporated? The public has been conditioned to know that a diagnostician furnishes expert care, and, by the same token, they are conditioned to respect an expert's fee; they are also more impressed by the final report given by such a specialist. Incidentally, there has never been any thought in the mind of anyone that the diagnostician, in turn, cannot indulge in therapeutics. Even after these many years there is a growing concept that an internist is a semiglorified family physician.

Unfortunately, however, he does not fulfill the old time connotation of a "family physician" with all of its nostalgia and reverence. Maybe this is because we refuse to do many of the procedures which rightly belong in other spheres of medicine. Hence, we are continually confronted with the plaintive cry, "Oh, for the good old days when we could have a doctor who took care of all our troubles." If the layman were sufficiently educated as to the function of the internist, would he have to make that statement? If, after all these years, Dr. Rhoads states that "after several frustrating hours of search in one of America's best equipped medical libraries, I was able to dig out no good statement of what is encompassed by the term," how can we be expected to have a layman understand the term "internist"? I sincerely hope that every internist will read the editorial written by Dr. Rhoads. It is most illuminating. If our specialty board would change its name from the American Board of Internal Medicine to the American Board of Diagnostic Medicine, I respectfully submit that a large part of our problem would be answered.

We as internists have no desire to give up our function as "family doctors." That is a major part of our work. Why not then refer to ourselves as "medical counselors," so, when that term is coupled with the term "diagnostician," the patient will know that he can come to us with his medical problems, that we will deal with them within the realm of our specialty, and that we will place them in proper channels. We would then be truly "family doctors," but on a plane thoroughly understood by the patient. It, therefore, seems paradoxical and somewhat ridiculous that after 23 years we, as internists, are still trying to define the term "internal medicine," that we are still trying to educate our patients as to what we represent, that we are the specialty whose fees are most often criticized, and that we are the one group which is in the middle and which seems to be taking the beating as it pertains to the high cost of medicine, because we are not considered as true specialists in the eyes of the populace in general.

I reiterate, I strongly urge that the American Board of Internal Medicine consider changing its name to the American Board of Diagnostic Medicine.

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MEDICAL FILM REVIEWS

Prevention and Control of Staphylococcal Infections: 16 mm., black and white, sound, showing time 17 minutes. Produced in 1958 by and procurable on loan from the Communicable Disease Center, P. O. Box 185, Chamblee, Ga.

This is a training film which is intended to stimulate thought and discussion rather than provide the final solution to the problem of controlling staphylococcic infections in hospitals. The ways in which staphylococcic infections are spread are briefly recapitulated. The film recommends the appointment, for each hospital, of a committee on infections consisting of a pediatrician, an internist, a surgeon, the director of the laboratories, a hospital administrator, and a nurse. Methods of controlling infections in hospitals are shown. These consist of isolation of infected patients, thorough washing of hands by members of the hospital staff after examination of each patient, adequate surgical scrubbing, placement of infectious patients requiring an operation last on the day's operating schedule, decontamination of the operating room, intelligent assignment of bed space to infectious patients, and institution of good housekeeping procedures in the care of infectious patients. Such care consists of int[illegible]gent handling of bedding, linen, old dressings, and instruments that have been used for infectious patients; a meticulous aseptic technique in dressing wounds of such patients; and the thorough washing of all objects in the infectious patient's environment with a good antiseptic solution. After infectious patients return home from the hospital, they should be followed up by telephone calls or by personal visits. In addition to instruction of staff members in how to prevent the spread of staphylococcic infections, patients should likewise be instructed in how to cooperate to minimize the spread of the infectious agent. The film closes with several questions to initiate discussion. It will be of interest to physicians, surgeons, hospital administrators, medical students, nurses, and housekeeping personnel.

The Epidemiology of Staphylococcal Infections: 16 mm., color, sound, showing time 13 minutes. Produced in 1958 by and procurable on loan from Communicable Disease Center, P. O. Box 185, Chamblee, Ga.

The message in this film is constructed around the epidemiology of staphylococcic infections which involves primarily the agent (Staphylococcus aureus), the reservoir (man), the host (man), and the environment (hospital). Factors that are briefly shown or mentioned are the morphology of the organisms in a gram-stained smear, the appearance of the colonies on a blood-agar plate, the coagulase test, bacteriophage typing, the increased resistance of the organism to certain antibiotics, and the various types of infections which are being encountered in hospital practice. The upper respiratory tract, primarily the nasopharynx, and skin lesions are pointed out as the main current reservoirs of the agent. Only a minority of the strains of the Staph. aureus have become highly pathogenic and communicable. The possible routes of transmission of the agent to a new host may be by the hands, handkerchieves and clothing contaminated with nasal secretions, shoes, airborne lint, and fomites. Any hospital patient or personnel may acquire the highly virulent strains of the agent to become either a staphylococcic patient or carrier and thus serve as a new reservoir. Such infected persons may also carry the agent to others in their homes and communities, and subsequently the agent may be reintroduced into a hospital. Preventive measures are not discussed. This film will be of interest to physicians, surgeons, hospital administrators, medical students, public health workers, epidemiologists, and technicians.

Routine Pelvic Examination and Cytologic Method: 16 mm., color, sound, showing time 14 minutes. Prepared by S. B. Gusberg, M.D., New York. Produced in 1958 by Audio Productions, New York, for and procurable on loan from the American Cancer Society, 521 W. 57th St., New York 19.

This film presents both the general technique of pelvic examination and the technique of obtaining and preparing cervical and vaginal smears as a part of that examination. Three methods of obtaining smears are shown. The value and importance of the routine use of cytology as a part of the pelvic examination is emphasized by narration, charts, and graphs. This is an admirable film. It stays close to the subject and presents the material concerning routine pelvic examination excellently. It is highly recommended for showing to medical students and general practitioners.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Mitral Insufficiency and Pulmonary Hypertension Accompanying Patent Ductus Arteriosus: Report of Three Cases. L. M. Linde and F. H. Adams. Am. J. Cardiol. 3:740-745 (June) 1959 [New York].

The clinical diagnosis of uncomplicated patent ductus arteriosus is not difficult. When this defect exists in association with other cardiovascular anomalies, the classic signs are often absent. This paper presents 3 patients with the previously unreported triad of mitral insufficiency and pulmonary hypertension in association with patent ductus arteriosus. In each of the 3 girls, ranging in age from 15 months to 7 years, the initial diagnosis was ventricular septal defect because of the absence of the typical to-and-fro machinery murmur and the presence of a loud, blowing systolic murmur. All had electrocardiographic and roentgenologic evidence of enlargement of the left atrium, both ventricles, and the pulmonary artery, and catheterization provided evidence of a patent ductus with pulmonary hypertension. Closure of the ductus resulted in great clinical improvement, but the loud systolic murmur persisted and the presence of mitral insufficiency subsequently became obvious. Early diagnosis and closure of the ductus is important in these patients in order to prevent irreversible vascular changes in the lungs. The etiology of the residual mitral regurgitation is not known, but its persistence has not produced obvious functional impairment.

On the Treatment of Acute Myocardial Infarction by Retrosternal Novocain Anesthesia. F. E. Ostapiuk. Terap. Arkh. 31:53-59 (no. 6) 1959 (In Russian) [Moscow].

The author treated 65 patients with acute myocardial infarction by retrosternal Novocain anesthesia. For this purpose 60 cc. of 0.5 cc. of Novocain solution was injected by puncture of the jugular fossa. In patients with tendency to hypotension, or to hypotension with bradycardia, 1 cc. of atropine sulfate was added to the Novocain solution. The injections were repeated either daily or with intervals of one or more days, depending upon the effect of the last injection. These injections were well tolerated except for a sense of weakness and dizziness in some of the patients. The subjective symptoms of acute infarction disappeared as a rule after the first injection. However, the patients were not free from repeated attacks of anginal pain and from other phenomena of myocardial ischemia. Attacks of anginal pain, of auricular flutter, and of paroxysmal tachycardia disappeared after repeated injections.

The injection treatment was discontinued if the electrocardiograms failed to show improvement after 4 or 5 injections. The effect of retrosternal injection of Novocain is believed to be due to anesthesia of the nerve plexuses of the anterior mediastinum, of the sympathetic nerve fibers, and of the vagi. This anesthesia results in dilatation of the coronary arteries of the heart and consequent improvement in the collateral circulation.

Changes in Coagulability of the Blood During Various Phases of Ischaemic Heart-Disease. L. McDonald and M. Edgill. Lancet 1:1115-1118 (May 30) 1959 [London].

In an earlier investigation the authors had compared the coagulability of the blood in patients with ischemic heart disease and in healthy controls. The patients in that group had angina pectoris on exertion, and, although cardiac infarction had occurred previously in some, it was recent in none. The studies described in this paper tried to find answers to questions raised by the findings in the earlier investigation. Coagulability of the blood in relation to platelet count, platelet stickiness, fibrinogen levels, thromboplastin generation, and prothrombin time (Russell's viper venom, "Stypven") were compared in 22 healthy men, 30 men with angina pectoris on exertion, 7 patients with acute coronary insufficiency, and 10 patients with cardiac infarction. All these patients were male except 2 with acute coronary insufficiency and 2 with cardiac infarction.

Values for platelet stickiness, thromboplastin generation, and fibrinogen levels increased from healthy controls to patients with angina pectoris, and from these to patients with cardiac infarction. Findings in acute coronary insufficiency were not

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The place of publication of the periodicals appears in brackets preceding each abstract.

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significantly different from those in angina pectoris, except that the platelet count was higher in acute coronary insufficiency than in other groups. There were no other significant differences between groups, in respect of platelet counts. Coagulability of the blood was higher in patients with angina pectoris than in healthy controls and higher again in patients with cardiac infarction. Patients with acute coronary insufficiency appeared to have a level of coagulability comparable to that found in patients with angina pectoris on exertion only and less than that found in cardiac infarction.

In 15 healthy men and 29 men with angina pectoris on exertion, blood coagulation was similarly tested on repeated occasions. The hypercoagulability of the blood in patients with angina pectoris was confirmed. The variations within the groups of healthy controls and of patients did not differ significantly, except in the total platelet count. This varied more in patients than in normal subjects.

Observations on hypercoagulability of the blood in normal people and on various factors which might affect blood coagulation (including rest in bed, age, the menstrual cycle, intravascular thrombosis, anticoagulants, diet, and serum cholesterol) are also presented. The authors conclude that there is clear evidence of phasic hypercoagulability when the blood of patients with ischemic heart disease is studied in vitro. This is entirely in keeping with a variable hyperthrombotic state, and ischemic heart disease is marked clinically by episodes of thrombosis. The possibility of heparin deficiency or overutilization in ischemic heart disease is being further investigated.

SURGERY

Evaluation of Operability in Patients with Pulmonary Hypertension by Catheterization and Occlusion of Patent Ductus Arteriosus. A. Actis-Dato and A. Tarquini. Circulation 19:821-826 (June) 1959 [New York].

The authors describe a technique of temporary occlusion of the patent ductus arteriosus during right heart catheterization by a balloon filled with contrast medium connected to the tip of the catheter. They tabulate data on 6 patients in whom they employed this technique. During temporary closure of the ductus, pulmonary artery and right ventricular pressures may drop, may rise, or may remain unchanged. With a drop, surgical occlusion of the ductus is definitely indicated, and with a rise it is definitely contraindicated. When there is no change, the authors believe the operation is indicated, but pressures should be measured during effort, such as working at an ergometer while the ductus is kept closed with the balloon. If the pulmonary pressure rises under effort, operation is not advisable.

The Value and Limitations of Thromboendarterectomy in Complete Obstruction of the Aorta and the Iliac Arteries: A Report on 18 Observations. P. Wertheimer, J. Sautot, J. Descotes and A. Sisteron. Semaine hôp. Paris 35:1841-1844 (May 28) 1959 (In French) [Paris].

The authors describe a modified technique of endarterectomy performed on 7 patients with complete obliteration of the aorta and of the iliac arteries corresponding to the Leriche syndrome, and on 11 patients presenting obliterations localized on the iliac axis but not extending to the aorta proper. One patient in whom a preoperative cardiogram indicated previous myocardial impairment died because of myocardial infarction. Two patients were operative failures. In the remaining 15 patients the operation was successful, both objectively and subjectively. Endarterectomy gives good results in patients in whom the obstruction is localized in the large vessels (aorta and common iliac arteries) and whose general condition and vascular status indicate an operation of such magnitude.

The Risk of Hepatitis from Whole Blood and Stored Plasma. P. I. Hoxworth, W. E. Haesler Jr. and H. Smith Jr. Surg. Gynec. & Obst. 109:38-42 (July) 1959 [Chicago].

Serum hepatitis is a calculated risk whenever whole blood or fresh plasma is transfused. The incidence in whole blood transfusion ranges from 0.2 to 0.5% for a single transfusion and in pools of plasma the infectivity may be as high as 22%. In earlier publications, the authors reported the results of a 4-year investigation made to determine the effect of storage of liquid plasma at temperatures of 72 to 95 F for 6 months upon the activity of the virus of serum hepatitis as demonstrated by human transmission of the disease. In that study no hepatitis was encountered in 282 followed-up patients exposed to the plasma of 4,892 donors but to no whole blood. In contrast, 6 cases of hepatitis occurred in a group of 563 patients, each of whom received both plasma and whole blood. Analysis of the data indicated that the whole blood was most likely the cause of the jaundice and the safety of stored plasma seemed apparent.

The studies reported in this paper aimed to provide conclusive evidence about the safety and effectiveness of room temperature storage of plasma and to avoid an experience such as occurred with the premature acceptance of ultraviolet irradiation of plasma as an antiviral agent. Among 3,349 followed-up recipients of 7,315 units of whole blood there were 19 cases of serum hepatitis. Thus in the Cincinnati area, minimal incidence of infectivity of whole blood from screened donors is 0.259% (19÷7315), or 1 in 380. In 674 followed-up patients exposed to plasma of 5,352 donors and

2,163 units of whole blood there were 6 cases of hepatitis. Based on the survey of recipients of whole blood this number of cases could be expected from the whole blood exposure alone, since 0.277% (6÷2163) would be the incidence of infectivity if whole blood was responsible.

Pooled plasma obtained from 4,961 donors and stored for 6 months at room temperatures averaging 80.6 F (27 C) produced no hepatitis in 317 followed-up recipients. If the experience had been the same as that with whole blood there would have been 39 cases of hepatitis among the 317 followed-up recipients of plasma only. Statistical tests show that the probability of the deviation of 39 from 0 is less than 1 in 1,000. Thus the storage of liquid plasma at temperatures of 72 to 95 F (22 to 35 C), averaging 80.6 F (27 C), eliminated the transmission of clinically detectable serum hepatitis in 317 recipients. Quite apart from the question of viral effects, processing plasma and storing it as a liquid for 6 months raises questions as to the suitability of the product. One of these is how much of its effectiveness as a blood substitute is retained. In this regard the trial product has given satisfactory clinical results in rectifying plasma volume deficits and in parenteral protein feeding.

A Review of the Complications of Resection in the Treatment of Pulmonary Tuberculosis. I. K. Dagher, F. A. Simeone, W. E. Neville and others. Surg. Gynec. & Obst. 109:61-66 (July) 1959 [Chicago].

This study was undertaken to review the serious complications of resection in the treatment of pulmonary tuberculosis in 207 consecutive patients operated on at the City Hospital of Cleveland. A complication was considered serious if it delayed convalescence, was life-endangering, or was fatal. There were 56 (27%) serious complications, including 10 deaths (4.8%). Leakage of air and the development of bronchopleural fistula and empyema were the most common complications, occurring in 7% of all patients operated on and forming 29% of the complications. Study of the patients who postoperatively had persistent leakage of air revealed one common denominator, the presence of disease in the neighboring lung tissue which was cut across during resection. Thoracoplasty was employed to obliterate the pleural space, to control air leak, and to prevent the development of empyema. This was successful in all of the patients to whom it was applied.

Bronchopleural fistula and empyema occurred in 9 of the patients. The 6 pneumonectomy patients in whom this complication developed were subjected to early thoracoplasty; 3 recovered and 3 died. Three other patients with bronchopleural fistula and empyema, in whom further major surgical procedures were considered too dangerous, were subjected to open tube drainage of the empyema, thereby establishing a bronchocutaneous fistula. Healing resulted in 2 of these 3 patients and the third one remains in the hospital with a permanent fistula. In retrospect the authors feel that this more conservative approach of drainage and establishment of an open bronchocutaneous fistula might have given better results in the aforementioned 6 pneumonectomy patients. The patient with a minimal respiratory reserve must be treated without the development of pleural complications if a successful outcome of the operation is to be obtained. On the other hand, air leak and threatening empyema may well be handled with a considerable saving of time by early thoracoplasty in the patients with a satisfactory respiratory reserve as measured by pulmonary function studies.

GYNECOLOGY & OBSTETRICS

Hypofunction of Anterior Lobe of the Hypophysis: Report of Case and Discussion of Possible Etiological Factors. K. Berg. Nord. med. 61:761-763 (May 14) 1959 (In Norwegian) [Stockholm].

A woman, aged 61 years, had had myxedema and anemia for 16 years before anterior pituitary insufficiency was diagnosed and the myxedema was found to be secondary to the hypophysial insufficiency. The possibility is considered that the massive prolonged intra-abdominal hemorrhage, caused by tubal rupture in the 15th week of ectopic pregnancy when the patient was 24, resulted in a more or less extensive necrosis of the anterior lobe of the pituitary and that a normal pregnancy 4 years later led to hypertrophy of the remaining hypophysial tissue. The patient felt well till she was 45, when she began to develop a myxedematous appearance, with anemia. There may be a slow-growing, giant-cell granuloma in the anterior pituitary lobe or necrosis, or perhaps both. At present, while under treatment with thyroxin and cortisone, the patient is completely free from symptoms.

PEDIATRICS

Patterns of Infection with Enteroviruses. D. M. McLean. J. Pediat. 54:823-827 (June) 1959 [St. Louis].

A wide diversity of clinical syndromes, including pericarditis, was encountered following infection with Coxsackie B5 virus in southern Ontario in 1958, which is in sharp contrast to the uniform clinical picture of aseptic meningitis resulting from infection with this virus in Minnesota and Iowa during 1956. Clinical manifestations of infection by enteric cytopathogenic human orphan (ECHO) 9 and ECHO 16 viruses may appear, either as an

exanthem or as an aseptic meningitis, or, in the case of ECHO 9 virus, both conditions may occur in the same patient. The abrupt changes in antigenic types of predominant enteroviruses during successive seasons, as observed in southern Ontario and in some areas of the northern United States, have been discussed.

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Apparently, an interval of about 10 days must intervene between the time the antigen is introduced into the body and the time the reagin appears in the blood. Reagin is released into the blood stream where it may be demonstrated by means of the passive transfer test, the so-called Prausnitz-Küstner reaction. Some reagin becomes intimately bound with some type of cell or cells. Whenever the antigen is subsequently introduced into the body, it unites with the reagin either in the blood stream or in or on the sensitized cell. The author further comments on such concepts as anaphylotoxin; the cells that are sensitized; their content of histamine, heparin, and, in some species, 5-hydroxytryptamine (serotonin); the "chemical mediators" released by the antigen-antibody reaction; and the role of the adrenal cortical hormones in influencing the acute allergic reaction.

An hereditary factor seems to play a part in allergic disease, but it appears that no one gene can carry such a complicated defect. Undoubtedly some people have the defect in the antibody-producing cell, in the mast or sensitized cell, in the enzyme-destroying mechanism, or possibly in other places. Still others may have a combination of various factors. As regards treatment, the author says that epinephrine, ephedrine, the theophylline compounds, iodides, and the antihistamine drugs give purely symptomatic relief, since all of them exert an effect on the end-organ only. Once the sensitized cell is attacked, no form of treatment will help that particular cell. Hyposensitization, by introducing blocking antibodies, can prevent the union of antigen and reagin. Finally, by meticulous environmental control, the antigen will not be permitted to enter the body, and this entire chain of events will be prevented from taking place.

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several microbes are present. Chloromycetin can be effective when other antibiotics have proved ineffective; it is not suitable for long-term treatment. From time to time bacteriological examination of the urine and determination of the resistance of the microbes must be performed. How long treatment is to be continued depends on the individual case. In chronic pyelonephritis treatment must be given for at least a year. In all recurrences a complete urologic examination is called for before application of a new course of treatment.

OPHTHALMOLOGY

The Occurrence of Glaucoma Following Occlusion of the Central Retinal Artery: A Clinicopathologic Report of Six New Cases with a Review of the Literature. L. E. Perraut and L. E. Zimmerman. A. M. A. Arch. Ophth. 61:845-865 (June) 1959 [Chicago].

That glaucoma often follows occlusion of the central retinal vein is well known, but during the course of routine histopathological study of glaucomatous eyes at the Armed Forces Institute of Pathology, a number of eyes were found in which the disease apparently followed an occlusion of the central retinal artery. Reviewing cases from the Registry of Ophthalmic Pathology of the Armed Forces Institute of Pathology, the authors found a number of possible examples of glaucoma secondary to occlusion of the central retinal artery, but in this report they confine themselves to 6 of the more recent cases in which there was clinical evidence that the ocular tension did not become elevated until after arterial occlusion. A clinicopathological study of these 6 cases and a review of 25 others collected from the literature convinced the authors that glaucoma after occlusion of the central retinal artery is a distinct clinicopathological entity, although a much less common one than glaucoma after occlusion of the central retinal vein. Typically, there is an abrupt onset of ocular pain due to secondary glaucoma within 9 weeks of the time of arterial occlusion. Treatment of this secondary glaucoma is generally unsuccessful, and the eye is frequently enucleated soon after the onset of ocular pain.

The pathogenesis of the glaucoma in these cases, like that which follows occlusion of the central retinal vein, is not understood. Histopathological studies in early cases before the formation of well-developed anterior synechiae have provided evidence that something provokes an outgrowth of mesenchymal cells from the uveal tissues of the iris root. These cells invade the chamber angle to form a delicate membrane along the inner surface of the trabecula. It is this newly formed tissue which is believed to cause the initial obstruction to the outflow of aqueous. Subsequently, the formation of broad peripheral anterior synechiae aggravates the obstruction.

Ocular Manifestations of Insufficiency or Thrombosis of the Internal Carotid Artery. R. W. Hollenhorst. Am. J. Ophth. 47:753-767 (June) 1959 [Chicago].

The author reports on 124 patients, between the ages of 41 and 78 years, with ocular abnormalities, 38 of whom had thrombosis of one or both internal carotid arteries, and 86 had symptoms or signs of intermittent insufficiency of one or both internal carotid arteries. The diagnosis was made either clinically or by angiography. The major symptom among the group of 86 patients was that of amaurosis fugax, which was present in 48, and which was cured in most cases by anticoagulant therapy. Other ocular manifestations included retinopathy on the side of the affected carotid artery in 15 of the 124 patients, asymmetric hypertensive retinal vascular changes in 10 patients, and lowering of the pressure in the retinal artery on the side of the affected carotid artery in 83 patients. Occlusions of the retinal artery or one of its branch arteries were observed in 14 patients, and 6 additional patients had an associated homonymous hemianopsia to the opposite side. Three patients had hallucinations in the homonymous half-fields; 3 others had transient homonymous hemianopsia; and 8 had permanent homonymous hemianopsia.

The importance of establishing the diagnosis of carotid occlusive disease during the period of intermittent insufficiency is stressed. Ocular symptoms which point to impending carotid occlusion include attacks of transient or permanent diminution of vision in one or both eyes. Such signs as a lowered pressure in the retinal artery of one eye, cotton-wool patches in one eye, or asymmetrical hypertensive changes should alert the examiner to the possibility of carotid artery disease.

INDUSTRIAL MEDICINE

Serologic Evidence of Occupational Psittacosis in Poultry-Plant Workers. M. E. Rindge, E. L. Jungherr and J. H. Scruggs. New England J. Med. 260:1214-1218 (June 11) 1959 [Boston].

After a brief review of the literature on psittacosis as an occupational hazard in poultry-processing establishments, the authors discuss the case of a 43-year-old woman who, in December, 1956, complained of cough, fatigue, backache, chilly sensations, and fever. She was treated at home for 3 weeks when, not having responded to therapy, she was hospitalized. On admission, an x-ray film of the chest showed moderate infiltration at the base of the left lung; the white cell count was normal. Subsequent x-ray examination showed a clearing of the left lung, and the case was diagnosed as viral pneumonia. After 10 days in the hospital a blood specimen was submitted to serologic examination for psittacosis. The specimen showed complete complement fixation, with lygranum antigen at a dilution of 1:64 (the highest dilution tested). The diagnosis was changed from viral pneumonia to psittacosis. Three weeks after discharge from the hospital, a second blood specimen still showed complete complement fixation at a dilution of 1:64. No source of psittacosis could be found in the patient's home environment, but a history of employment showed that during the previous 18 months she had been employed in a poultry-processing plant, where her principal job was removing the trachea from birds.

In a serologic survey of the employees of the plant in which this woman worked ("Plant A"), specimens were obtained from 34 of 40 persons. Six of the 34 had titers suggestive of past contact with the psittacosis virus. A review of the records showed that the 6 serologic specimens, classified as reactive, were from employees, including the initial patient, who had worked in the evisceration operation. The detection of serologic reactors only among the employees working on evisceration, combined with clinical histories suggestive of viral pneumonia, prompted the expansion of the serologic survey to other poultry-processing plants in Connecticut (plants designated as B, C, and E in the same geographical area as plant A; and plants D and F in another part of the state). The poultry flocks in the areas of the plants were screened for latent infections.

In the plants surveyed, reactors were found only among the employees having the most direct contact (eviscerators) with probably infected birds. A majority of the workers with high titers (acute reactors) gave a history of episodes of upper respiratory illnesses since their employment in poultry processing. The high percentage of reactors in the poultry-plant workers 35 years of age and over, as compared to the control group, appears to be related to duration of employment in this industry rather than to age. The indirect complement-fixation test is highly specific for the serologic diagnosis of ornithosis (psittacosis) in chickens. The identification of 4 reactor poultry flocks that probably contributed to the supply of Plants A and E revealed a possible source of the recognized and unrecognized cases of psittacosis among the employees.

THERAPEUTICS

The Use of Steroids in Tuberculous Patients with Untoward Reactions to Anti-Microbial Therapy. R. Grossman. Dis. Chest 35:615-624 (June) 1959 [Chicago].

The author reports on the efficacy of a regimen of combined steroid therapy and chemotherapy in patients exhibiting moderate to severe reactions to antituberculous drugs. Cases were selected that had both active pulmonary tuberculosis and severe untoward drug reactions to one or more antimicrobial drugs. Chemotherapy was discontinued, and steroid hormones (ACTH and, if necessary, prednisolone) were administered in suppressive doses for 3 days. Antihistaminic medication plus steroid ointment was given as supplements if necessary. After the initial 3 days of suppressive hormonal therapy, the antituberculous agents were introduced singly and in progressively increasing doses. After one antimicrobial agent was successfully introduced, administration of the second was started. When the patient could tolerate 2 or 3 chemotherapeutic drugs, the dosage of steroid hormone was reduced gradually over a 3-to-5-week span. The patient was followed with periodic sputum examinations and chest x-rays to evaluate the effect of therapy on the underlying disease.

The histories of 5 patients who were subjected to this therapeutic regimen are presented. The drug reactions, such as pruritic rash, angioedema, fever, and hepatitis, as well as the disease toxicity, namely, cough, expectoration, anorexia, fever, and malaise, were suppressed simultaneously. There was regression of tuberculous exudative and recent infiltrative lesions. There was no injurious effect on the underlying tuberculous process, as noted on serial x-ray films of the chest and sputum cultures over a period of 21 to 26 months after steroid treatment. The steroids are a potent addition to the armamentarium of the clinician in treating tuberculous patients who manifest untoward drug reactions to the chemotherapeutic agents. However, one must be alert to the side-effects and physiological effects of the steroids which may be injurious to the patient.

Breast Cancer: A New Approach to Therapy. G. W. Watson and R. L. Turner. Brit. M. J. 1:1315-1320 (May 23) 1959 [London].

The authors do not believe that any spectacular improvement will come from existing methods of breast cancer therapy, which assume that the disease in the early stages is localized to the breast and adjacent lymph nodes. Endocrine ablation offers further prospects in late breast cancer, but even with such radical measures as pituitary ablation or bilateral adrenalectomy with oophorectomy, positive palliative results are obtained only in approximately 50% of cases, and a good remission lasting for a year or longer in rather less than 25%. In a few women remissions have been obtained with androgen therapy, presumably as a result of a selective breeding out of the estrogen-dependent cells under androgen therapy. It occurred to the authors that it should be possible to prevent the emergence of the endocrine-resistant strain of cancer cells by the simultaneous administration of an antimitotic drug which, particularly in the form of an alkylating agent, has been used in the reticuloses. It was decided to use testosterone with oophorectomy as the endocrine part of the therapy. Triethylene thiophosphoramide (Thio-TEPA) was chosen as the alkylating agent.

Initially only patients who had widely disseminated lesions, or who had recurrences after irradiation or surgery, were admitted to the trial. Subsequently, when the efficacy of the treatment was established, the authors took any patient with a carcinoma of the breast irrespective of the stage of the disease. The group treated consisted of 34 patients, whose ages ranged from 23 to 76 years. At the beginning of therapy 17 patients were still within the menarche. One patient, aged 23 years, was pregnant. Eighteen patients had recurrent lesions or metastases following previous surgical or radiation therapy. In 4 of these the recurrence began between 3 and 7 years after their original treatment, and in the remaining 14 within 3 years. Sixteen patients had had no previous treatment. The patients were treated with either thio-TEPA alone (11 patients) or thio-TEPA and testosterone. Marked tumor inhibitory effects were obtained in 30 of the 34 patients. The most satisfactory results were obtained in the group receiving thio-TEPA and testosterone. On the basis of the results obtained in the advanced cancers, a trial of surgery and chemotherapy, as opposed to surgery and irradiation, is advocated for early breast cancers.

PUBLIC HEALTH

Clinical Trials in Infants of Orally Administered **Attenuated Poliomyelitis Viruses.** S. A. Plotkin, H. Koprowski and J. Stokes Jr. Pediatrics 23:1041-1062 (June) 1959 [Springfield, Ill.].

Forty-six infants, ranging in age from 1 day to 6 months, were given more than 100 feedings of living, attenuated poliomyelitis viruses without the occurrence of major or minor illness. The strains used were CHAT, type 1, which was isolated from the feces of a child who had been fed tissue-culture material representing the third human intestinal passage of the SM virus; Wistar, type 1, an isolate in monkey-kidney tissue culture from the stool of an asymptomatic calf that developed type 1 antibodies subsequent to the appearance of viruses in its feces; Jackson, type 2, which is a chick-embryo adapted strain isolated from the stool of a child fed the attenuated MEF-1 strain; P-712, type 2, which was isolated by Fox from the stool of an asymptomatic child; and Fox, type 3, which was isolated from the stool of an asymptomatic child.

All strains except the Jackson were found to be antigenic on oral administration. Response to vaccination was demonstrated in these infants by the presence after vaccination of antibody levels significantly in excess of those attributable to transplacentally acquired antibodies, and by the detection of fecal excretion of poliomyelitis viruses. Infants less than 2 months old were more difficult to immunize than older infants. The evidence suggests that biological immaturity, rather than transplacental antibodies, caused the difference. When the 3 types of poliomyelitis viruses were fed at 3-week intervals, responses occurred to all types. No interference between types was observed when they were fed in all possible sequences. Three infants who were given a second feeding of homotypic attenuated poliomyelitis viruses 3 to 5 months after a successful vaccination showed resistance to intestinal reinfection. It can be concluded from these studies that vaccination against poliomyelitis with orally administered, living, attenuated viruses is entirely feasible in infants over 2 months of age, if 3-week intervals are allowed between feedings of the 3 types of viruses.

Vaccination Against Poliomyelitis: Practical Data. P. Lépine. Presse méd. 67:941-943 (May 9) 1959 (In French) [Paris].

French poliomyelitis vaccine consists of an aqueous suspension of a mixture of inactivated cultures of the 3 types of poliomyelitis viruses. Inactivation is obtained with beta-propiolactone after attenuation with formaldehyde at a low temperature. This guarantees conservation of the antigenic power. Vaccination should be performed with 3 hypodermic injections of 1 ml. of the vaccine. There should be an interval of at least 3 weeks between the first and second injections, although a month would be even better. However, there should not be a lapse of more than 3 months between the first and second injections and of more than 7 months between the second and third injections. Revaccination must take place at the end of one year with a dose of 1.5 ml. There has been discussion in the press of oral vaccination with living, attenuated poliomyelitis viruses. The procedure appears easy, interesting, and economical. However, it has not been possible to obtain an orally administered vaccine simultaneously active against the 3 types of poliomyelitis viruses with this procedure. For the moment such a procedure is only conceivable in case of a serious epidemic due to a single viral type.

BOOK REVIEWS

Trauma. By Harrison L. McLaughlin, M.D., Professor of Clinical Orthopedic Surgery, College of Physicians and Surgeons, Columbia University, New York. Cloth. $18. Pp. 784, with illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, England, 1959.

This volume represents an excellent series of specialized monographs, written for the most part by senior members of the staff of Presbyterian Hospital, New York. It is difficult to prepare a closely cohesive work covering all phases of this subject, since the understanding and treatment of injury to the human body necessarily involves familiarity with all of the many special fields of medicine. In general the book is well organized, and this should make it particularly useful for students, interns, and residents and as a quick reference work for the management of some special problem. For the student, it is well worth reading in its entirety. After a general discussion of the local, regional, and systemic responses to injury and the general principles of the treatment of trauma are several sections dealing with the specialized nature of injury to the various systems and anatomic structures. Each is prefaced by a discussion of the surgical anatomy involved. Illustrations are profuse and, for the most part, pertinent.

The chapter on General Principles in the Treatment of Trauma is particularly valuable, especially with regard to the early management of fractures, and should provide a useful guide for those treating injuries in the emergency room. Although there is some mention of other types of injury and a section on therapeutic priorities in multiple injuries, a discussion of the assessment and immediate treatment of the unconscious patient per se would have been most helpful, particularly for medical students and young physicians. Undoubtedly proper triage and treatment of the severely injured patient within the hospital is assumed, but in the interests of objectivity the subject should have received more emphasis. Although one gains the impression that there is a heavy orientation toward a detailed discussion of skeletal injury, this is perhaps justifiable. The book as a whole represents the unified and coordinated approach to the problem of injury of a hospital staff well qualified by training and experience.

Cancer. Volume 5. Part IX: Radiotherapy. Edited by Ronald W. Raven, O.B.E., T.D., F.R.C.S., Joint Lecturer in Surgery, Westminster Medical School, University of London, London. Cloth. $18. Pp. 406; 19, with 136 illustrations. Butterworth & Co. (Publishers) Ltd., 88 Kingsway, London, W. C. 2, England; 1367 Danforth Ave., Toronto 6, Canada, 1959.

The previous volumes which presented various aspects of the problem in an authoritative fashion are now followed by a fifth devoted to radiotherapy. Like its predecessors, this volume presents a concise review of the problems by a number of qualified authorities, mainly from England, but also from Ireland and Canada. It is astonishing how much useful information has been compressed into individual chapters which average only 15 pages. A short historical review of the problem is followed by seven chapters dealing with the technical aspects of, reactions to, and measures of protection against radiotherapy. The rest of the book discusses therapy as applied to different organs. Short reviews of clinical and pathological aspects of the various types of tumors are followed by discussions of techniques of treatment, results of and indications for radiation, and, in many instances, evaluations of the respective values of radiotherapy and surgery and contraindications to and complications of treatment. The book is extensively illustrated with diagrams, clinical figures, reproduction of gross pathological specimens, and photomicrographs. The selection of pictures supplements a lucid and well-written discussion. Obviously, in a field of such rapid progress, the selection of the material is bound to be subjective, and there may be areas of disagreement. In view of its excellent organization, it should be a very useful reference book for the clinician or pathologist who wishes to orient himself about the various and often difficult problems of radiotherapy.

Textbook of Toxicology. By Kenneth P. DuBois, M.Sc., Ph.D., Professor of Pharmacology and Director, United States Air Force Radiation Laboratory, University of Chicago, Chicago, and E. M. K. Geiling, Ph.D., M.D. Cloth. $6.50. Pp. 302, with illustrations. Oxford University Press, 417 Fifth Ave., New York 16, 1959.

This comprehensive new textbook presents its subject matter in a concise, understandable manner. The phenomenal expansion of industry; the widespread use of atomic energy; the growth of all branches of chemistry; the increase in the use of chemical agents for industrial, agricultural, and household purposes; and the recognition of the rights of the individual to protection against possible hazards have introduced many new toxicologi-

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These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

cal problems. With these advances has come the need for a textbook which presents the essentials of toxicology as an introduction to the subject and as a source of information. This book is designed to cover this need for medical students, graduate students, and undergraduates who are interested in the general principles of toxicology and in facts with practical application. It should also be of great use to the practicing toxicologist, general physician, and research worker.

The historical development, general principles, and medicolegal aspects of toxicology are discussed in the first chapters. Later chapters include general considerations on airborne poisons, information on individual chemicals, plant and animal poisons, and relatively new subjects such as radiation hazards, pesticides, and household poisons. Information concerning the effects of different classes of chemical compounds, the practical circumstances under which poisoning can occur, diagnosis, and treatment are given. The practical value of this book is increased by numerous tables that show the facts and figures pertinent to problems of accidental poisoning. The acquisition of knowledge of the symptoms and of recommended methods of treatment of poisoning has become an important phase in the education of physicians who, in addition to handling the medical problems concerning these agents, are in an excellent position, together with the pharmacist, to educate the public about the hazards and benefits derived from the use of chemical compounds.

The Biochemistry of Clinical Medicine. By William S. Hoffman, Ph.D., M.D., F.A.C.P., Professorial Lecturer in Medicine, University of Illinois College of Medicine, Chicago. Second edition. Cloth. $12. Pp. 734, with 63 illustrations. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1959.

The regard in which the first edition of this book has been held since its appearance in 1954 is further enhanced by the careful revision in this new edition. This work covers many fields of medicine in which biochemical understanding can help the clinician in his diagnosis, prognosis, and treatment of disease. The chapters on diabetes mellitus, hepatitis, nephritis, cirrhosis of the liver, and gout show the author's thorough knowledge. His interest in the application of all biochemical fields to medicine is reflected in the character of his discussions; he has given much thought to the development of these discussions from the point of view of the clinician rather than from the point of view of the biochemist. The subject matter is presented by explanation, manner of derivation, and clinical application. The approach, therefore, is essentially biochemical. While not drastically altered, much new material has been added to bring some of the topics up to date. Coverage of the literature which is one of the weaknesses of this as well as the first edition, has been extended to 1958. The author's effort toward simplification for the benefit of the physician leads to a continuance of the old manner of reporting electrolyte concentrations, which is confusing and of little value. More drastic revision here would have been an improvement. This is an excellent book for the practitioner. The author has provided a comprehensive and integrated coverage of the application of biochemistry to the practice of medicine in an interesting, instructive, and serviceable manner.

Gynecologic Endocrinology. By Gardner M. Riley, Ph.D., Associate Professor of Obstetrics and Gynecology, University of Michigan Medical School, Ann Arbor. Foreword by Norman F. Miller, M.D., Professor and Chairman of Department of Obstetrics and Gynecology, University of Michigan Medical School. Cloth. $8.50. Pp. 330, with 72 illustrations. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1959.

The author has attempted the difficult task of condensing the field of gynecologic endocrinology into a book of 330 pages. In large part, he has succeeded. The factual material presented and the extensive bibliography give an adequate introduction to the subject. The sections on basic physiology and laboratory tests are the highlights of the book. Physicians should also appreciate the listing of available endocrine preparations, by both generic and trade names. Though incomplete, this formulary is adequate for a basic therapeutic armamentarium. The section on clinical syndromes is by far the weakest portion of the book, but it is adequate for an introduction. Controversial points are avoided, often wisely, but sometimes to the detriment of the book. In a few instances, the information given by the author on basic etiology has been superseded by more recent data. The inclusion of concepts of the causes of certain conditions would have added to the book's value. The detailed emphasis on laboratory studies and methods seems unwarranted in a book designed for the clinician. The section on physiology and the bibliography, however, make the book a worthwhile addition to the library of those physicians interested in this phase of diseases of women.

Mental Subnormality: *Biological, Psychological, and Cultural Factors.* By Richard L. Masland, Seymour B. Sarason and Thomas Gladwin. Survey of research sponsored by National Association for Retarded Children. Cloth. $6.75. Pp. 442, with illustrations. Basic Books, Inc., 59 Fourth Ave., New York 3, 1958.

This informative book is made up of two separate reports. Although they vary in opinions as to the cause of mental subnormality, they definitely contribute to the understanding of this problem. The author of the first section is a neurologist and psychiatrist who extensively reviews the literature regarding the etiological factors during the prenatal, perinatal, and postnatal periods. He also attempts to inspire the reader so that more research in genetics, biochemistry, and the social sciences can be developed.

The second section is written by a psychologist and an anthropologist who have been closely associated with the problem. They discuss the postnatal psychological and cultural causes of mental retardation in the mildly retarded, which includes the largest percentage of such persons. They also discuss the shortcomings of current psychological tests and their interpretations. Research in medicine, biochemistry, psychology, sociology, and other fields is strongly recommended. This excellent volume has an extensive bibliography which should be read by all pediatricians, neurologists, psychiatrists, psychologists, social scientists, and educators.

Orthopaedics: Principles and Their Application. By Samuel L. Turek, M.D., Attending Orthopaedic Surgeon, Weiss Memorial Hospital, Chicago. Cloth. $22.50. Pp. 906, with 600 illustrations. J. B. Lippincott Company, E. Washington Sq., Philadelphia 5; 4865 Western Ave., Montreal 6; Pitman Medical Publishing Company, Ltd., 39 Parker St., London, W. C. 2, England, 1959.

To anyone engaged in the teaching of residents in orthopedic surgery this book may well be the fulfillment of a dream. Active orthopedists have all wished that they might find the time to impart their knowledge by producing a volume such as this. This book presents the accumulation of many years of thoughtful collection of data, tempered by the author's experience and broadmindedness. It is to the author's credit that he has treated controversial subjects with short, but adequate, presentations of other methods of treatment. He uses admirable restraint and presents a conservative approach.

This volume should be of immense value, not only to residents but also as a ready reference book for the active practitioner, orthopedist, general surgeon, and internist. The format of this volume is such that few subjects in orthopedics will be difficult to locate. It is gratifying to note that fractures as such were omitted from the subject matter. This reflects the restraint of the author and his willingness to leave this matter to recent standard textbooks on the subject. Perhaps, some day, he may present the profession with a volume on fractures as excellent and concise as is this one.

Progress in Allergy (Fortschritte der Allergielehre). Vol. V. Edited by Paul Kallós. Contributors: St. V. Boyden et al. Cloth. 82 Swiss francs. Pp. 508, with 103 illustrations. S. Karger AG., 25 Arnold Böcklinstrasse 25, Basel, Switzerland; Swiss Bank Corporation, New York, 1958.

The fifth volume of this series, like some of its predecessors, is a review of selected topics on immunology. The seven selected subjects are Diffusion–in Gel Methods for Immunological Analysis; The Release of Histamine; The Immunological Response to Antigens of the Tubercle Bacillus, Some Experimental Aspects; Studies on the Mechanism of Hemolysis by Antibody and Complement; Tissue Transplantation Immunity; Cell Lysis and Related Phenomena in Hypersensitive Reactions, including Immunohematologic Diseases; and Immediate Reactions in the Skin of Experimental Animals Provoked by Antibody–Antigen Interaction.

All of the chapters are well written and thorough. The multiple topics covered in the chapter on cell lysis and related phenomena deserve particular mention as an example of brevity and thoroughness. In less than 90 pages this author discusses a variety of important subjects, quoting from 1,118 references. Similar thoroughness is found in most of the other chapters, particularly those on complement and on tissue transplantation immunity. An attempt at establishing some pattern of unity in the diverse subjects discussed is made by the editor in an interesting introductory chapter. He outlines the borders of present knowledge of allergy and indicates how future work in each of the fields covered in this volume might extend these borders. This excellent review of selected subjects should be of great value to advanced workers in the field of allergy.

Clinical Orthopaedics. Number 13: Spring, 1959. Anthony F. DePalma, editor-in-chief. With assistance of associate editors, Board of Advisory Editors, and Board of Corresponding Editors. Cloth. $7.50. Pp. 393, with illustrations. J. B. Lippincott Company, E. Washington Sq., Philadelphia 5; 4865 Western Ave., Montreal 6, Canada; Pitman Medical Publishing Company, Ltd., 39 Parker St., London, W. C. 2, England, 1959.

This volume is similar in format to the preceding ones but also includes the cumulative index for volumes 7 to 12. The first article is a tribute to the late Dr. Sterling Bunnell and gives a brief review of his many accomplishments, with stress on his interest in and his influence on surgery of the hand. The following 17 chapters are devoted to surgical problems of the hand, a field in which Dr. Bunnell was a pioneer. Chapter 2 is most interesting as it deals with the comparative anthropology of man's hand. All too few orthopedists have sufficient knowledge of this aspect of their field. The other chapters in this section are well written and amply illustrated. Although it presents nothing really new, this section constitutes an excellent review and stresses "conservative therapy" in the sense of saving everything that will improve function rather than a merely nonoperative approach. The second section of the book deals primarily with general orthopedic problems. These are adequately covered and most chapters are followed by a summary. Most articles have a bibliography. As is usual in any volume of this kind, some methods of treatment are controversial and this, in and of itself, should stimulate the reader. Like its predecessors, this is a good reference book and handy reading for medical and orthopedic library use.

QUESTIONS AND ANSWERS

UNEXPLAINED DEATH OF INFANT

To the Editor:—*A 21-month-old twin had a slight cough late one evening. The next day he developed a fever, labored respirations, and some cyanosis. At the hospital, a chest x-ray showed a massive shift to the left, with the trachea appearing to pass into the left lung field and with collapse of the left lung. Bronchoscopy showed no foreign body. He was given gamma globulin, therapy with penicillin intravenously and chloramphenicol was started, and he was put into an oxygen tent. At one time, an oxygen flow of 12 liters per minute was needed to reverse the cyanosis. The leukocyte count was 36,000 per cubic millimeter. His temperature varied between 102 and 103 F (38.9 and 39.4 C). He labored on; his respiration would falter and then go on. A half-hour after examination by a consultant, the child died suddenly. Autopsy showed only inflammatory changes. Bacterial culture so far has grown nothing. Could hydrocortisone intravenously or one of the other corticosteroids have given this infant a better chance? Is a tracheotomy usually advisable in a case like this? Could consultation, for a critically ill infant, by interrupting the oxygen supply, have contributed to the cause of death?* *M.D., Pennsylvania.*

Answer.—It is difficult to speculate regarding the exact etiology of the condition described. Fulminant pneumonia in infancy will sometimes follow such an unrelenting course, but this does not adequately explain the massive shift of the mediastinum to the left. Early in infantile pneumonia there may be some degree of shift toward the affected and partially atelectatic side, but not to the degree described. Foreign body in a left major bronchus was apparently excluded by the bronchoscopy and the autopsy findings. No changes are described which might point toward pneumothorax on the right. It would be interesting to reexamine the x-ray films for any additional evidence they might provide.

Apart from the remarkable mediastinal shift, the high leukocyte count points toward bacterial infection, especially suggesting the pneumococcus or perhaps the staphylococcus as the cause of fulminant disease. This would necessitate the assumption that the extreme shift of the trachea and mediastinum was perhaps more apparent in the x-ray than actually present. One is tempted to conclude that overwhelming pneumonia was the cause of death.

In retrospect, hydrocortisone might have been effective in arresting the precipitate course of disease until adequate antibiotic response could be established, but this is highly problematical under the conditions which are described. The antibiotics given would seem to be appropriate to the probable bacterial etiology. Tracheotomy would be inadvisable because bronchoscopy apparently demonstrated an adequate airway leading to the lower bronchi. Tracheotomy could have been effective only if there had been obstruction in the upper air passages. Unless bronchoscopy itself caused obstruction due to edema in the region of the larynx, tracheotomy would have only added another difficulty. Gamma globulin was apparently given on the suspicion that this child might have a deficiency; while this was certainly harmless, it was ineffective and probably inappropriate. Consultation and careful examination is a manifest necessity in such a desperate situation, and it is most unlikely that the brief interruption of oxygen administration necessary for adequate examination contributed at all to the end-result.

EMERGENCY OXYGEN ADMINISTRATION

To the Editor:—*As chairman of a county medical committee, I am interested in the value of oxygen (given by resuscitator) in acute pulmonary and cardiovascular emergencies. Please give an opinion on this.*

Leonard B. Shpiner, M.D., Kankakee, Ill.

Answer.—The Pulmotor is an apparatus, designed in Germany and introduced in the United States, for producing artificial respiration by forcing air into the lungs and, when they are distended, sucking out expired air. The American counterpart is called the resuscitator, and it forces oxygen from tanks into the lungs and sucks out expired breath much the same as the Pulmotor. Pulmotors are no longer marketed in the United States. The inhalator is an apparatus for administering oxygen to patients with embarrassed respiration but who are not in the state of apnea. The modern portable appliance for artificial respiration usually combines the resuscitator, the inhalator, and the oxygen tanks. This unit is also named a resuscitator in the United States, but the name is a misnomer since the inhalator is part of the equipment but not mentioned in the name. The resuscitator-inhalator is an efficient and acceptable apparatus when used by physicians and

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The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

properly trained nonmedical rescue agencies. The resuscitator is recommended for treatment of persons during drowning, gas poisoning, and suffocation, but often the device is not at the scene of the accident; therefore, it does not replace the necessity of knowing and practicing a good method of manual artificial respiration.

Answer.—Resuscitators sometimes are used to administer oxygen quickly in emergency situations, even though the exact diagnosis is not known to lay rescue-squad members and nonmedical attendants in hospital emergency rooms. Considering the acute conditions as a group, much more benefit will come from administering the oxygen than from withholding it. The only important physiological state in which there is contraindication to oxygen therapy is marked respiratory acidosis with compensatory rise in bicarbonate level, as in severe emphysema with infection. This condition constitutes a minority of those encountered, and administration of oxygen to such patients will be discontinued soon, if indicated, because medical care presumably will be available quickly.

Since most of the patients are breathing, the resuscitator mechanism is adjusted to deliver oxygen by steady flow at the rate desired. In case of apnea, the mechanism may be adjusted so that alternating pressure levels result in artificial ventilation of the lungs. Years ago, Drinker, Haggard, and others objected to the use of Pulmotors for ventilating the lungs in case of apnea, and the term Pulmotor remains in disrepute. Well-designed and properly adjusted resuscitators now available may be used safely in emergencies. Medical consultants should be available to rescue-squad members. Since the administration of oxygen frightens some patients, attendants should be instructed appropriately.

ELECTROSHOCK IN HEART DISEASE

To the Editor:—*A 79-year-old woman with arteriosclerotic heart disease and emotional instability attempted suicide by taking an overdose of barbiturates. What prophylactic management is recommended?*

M.D., New York.

Answer.—If a person is depressed to such a degree that she attempts suicide, there is no way to prevent recurrence of such an attempt. Though the family of the patient promises continual supervision, or even though 24-hour nursing supervision is provided at the patient's home, one cannot help but feel that all plans are doomed to fail sooner or later. This fact cannot be emphasized too strongly to the relatives. A suicidal patient belongs in a closed ward, and some even manage to commit suicide within such a ward. The sovereign treatment for depression of this degree is still electric shock, which, with proper precautions, such as the combined use of barbiturate anesthesia and relaxant medication, can be carried out even in the presence of a somewhat damaged heart. The decision regarding shock treatment should be made after thorough examination by a heart specialist who is well versed in the hazards of electric shock treatment.

TRAUMATIC HEPATITIS

To the Editor:—*An apparently healthy male, aged 45, sustained moderately severe trauma for several hours to the upper right quadrant of his abdomen. His complaint was pain in this area, and he noted that his urine was dark in color. Physical examination revealed no fever and no tenderness in the upper right quadrant or over the kidneys. Urine examination was normal except for a strongly positive urobilinogen finding. There was no jaundice. Gallbladder visualization study was unsatisfactory, but when double the normal amount of contrast medium was given the gallbladder was visualized and was seen to empty and function in a normal manner. No stones or abnormalities were detected. On later urine examination, no urobilinogen was found. This sequence of events extended over a period of seven days. With the evidence listed, particularly the history of trauma, is it reasonable to entertain the possibility of a traumatic cholecystitis and/or traumatic hepatitis?*

Frank H. Jaklitsch, M.D., Westbury, L. I., N. Y.

Answer.—The development of urobilinogenuria after abdominal trauma strongly suggests a possible hematoma. This could be located under the capsule of the liver or in retroperitoneal structures. Disintegration of any volume of blood will produce a urobilinogenuria of the type described here. It is rare to have cholecystitis arise from external trauma. One would expect that an injury of sufficient magnitude to damage the gallbladder would probably produce a laceration or rupture of the liver, with its attendant grave prognosis. Traumatic hepatitis is not known to exist—the only liver lesion after injury being a nodule or a scar.

EPIDERMOLYSIS BULLOSA

To the Editor:—*Please give information regarding recent research on the cause of epidermolysis bullosa. What is the best treatment, apart from prophylactic measures?*

M.D., Canada.

Answer.—Unfortunately, the cause of epidermolysis bullosa is unknown except that it is a genetic defect which may be either dominant or recessive. The disease varies in severity, and it is possible that mild, unrecognized examples are not too uncommon. As a rule, the condition tends to persist, although in some instances it may decrease in severity or disappear at puberty. Treatment is [illegible] satisfactory and follows fashions. Most reports of successful therapy have contained only one case because of the rarity of the disorder. More recently suggested measures include therapy with cortisone (especially when given parenterally), antimalarial drugs, and diiodohydroxyquin. The paucity of research in this disease is underscored by the fact that not a single article on epidermolysis bullosa has been summarized in the "Yearbook of Dermatology and Syphilology" during the past three

CARE OF THE AGED EPILEPTIC

To the Editor:—*May I ask what the judgment would be on admitting persons with severe epilepsy to homes for the aged? What is the usual custom in such cases?*

Frank G. Keller, M.D., North Manchester, Ind.

Answer.—There can hardly be any general custom or rule. The severity will vary for each person, and facilities for adequate drug or other treatment will vary for each home. The addition of convulsions to whatever other physical disabilities the aged person might have should not condition his admission to a home for the aged, provided, of course, that appropriate medical care is available.

GAMMA GLOBULIN DEFICIENCY

To the Editor:—*Is there an error of units in the dose of gamma globulin suggested for the management of gamma globulin deficiency in the answer on page 1547 of the March 28, 1959, issue of* The Journal? *Many of the published recommendations have mentioned a dose of 0.1 Gm. per kilogram of body weight monthly. Since the solutions available contain about 165 mg. of gamma globulin per milliliter, this would be equivalent to about 0.6 ml. per kilogram, or 0.3 ml. per pound of body weight, and not the 0.1 ml. per kilogram suggested in the answer.*

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The above comment was referred to the consultant who answered the original question, and his reply follows.—Ed.

To the Editor:—*Currently, the treatment for a patient with agammaglobulinemia (and hypogammaglobulinemia) is 20 to 40 cc. of gamma globulin for children (according to weight) and 30 to 50 cc. for adults, administered intramuscularly and given monthly.*

YELLOW JACKET STING

To the Editor:—*Information about successful desensitization of a patient allergic to insect stings should be given to the author of the question on yellow jacket sting in* The Journal, *May 30, 1959. My experience with this is recorded (Texas* [illegible] *Med. 46:639 [Aug.] 1950), and a recent paper by Thomas* (Virginia M. Month. 85:415 [Aug.] 1958) *reports similar results. I have cared for 40 patients who have had moderate to severe anaphylactic reactions prior to desensitization and who, after the process, had only local reactions to subsequent stings. Desensitization can be effective and is often lifesaving. Once there has been a severe reaction to an insect sting the patient should always have sublingual isoproterenol tablets with him for immediate prophylactic therapy. This is not as effective as epinephrine but will provide time to obtain the latter drug.*

Boen Swinny, M.D.
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San Antonio 5, Texas.

The above comment was referred to the consultant who answered the original question, and his reply follows.—Ed.

To the Editor:—*The comment and reference articles reemphasize the seriousness of insect stings and anaphylactic shock which may occur in the hypersensitive patient. They also, I believe, strongly support the opinion that, while desensitization of susceptible patients has been done, the results have not been completely satisfactory. Immunization is quite specific and to be effective must be done with the venom of the particular insect to which the person is sensitive. For protection to be totally effective the immunizing injections should be on a continuing schedule. Except within limitations I do not think immunization is wholly dependable.*

The best medicament for use in treating a severe anaphylactic reaction is epinephrine. A person likely to have such a reaction can usually be provided with this drug and a syringe for an immediate injection in an emergency. In the reply to the original inquiry the function of epinephrine for the anaphylactic symptoms and the local treatment for the immediate relief of pain may not have been clearly delineated. The suggested alkaline local treatment should not be considered as effective care for the anaphylactic shock.

Editor's Note: The comment and answer on the practical value of patient desensitization may appear to be in conflict, but this is actually a matter of semantics. The intent of publication is to inform the physician as broadly as possible on this subject. There have been several other recent articles which will be of interest to the reader.

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